

SERVICE MANUAL

STG - ROTISSERIE OVEN MODELS STW - WARMER MODELS

MODELS

Programmable controls **STG5 P**
 STG7 P

Warmers **STW5**
 STW7

***Fri-Jado produced Programmable Rotisseries with
serialnumbers starting with 1000**



Model STG7 P

- NOTICE -

This manual is prepared for the use of trained Service Technicians and should not be used by those not properly qualified. If you have attended a training for this product, you may be qualified to perform all the procedures in this manual.

This manual is not intended to be all encompassing. If you have not attended a training for this product, you should read, in its entirety, the repair procedure you wish to perform to determine if you have the necessary tools, instruments and skills required to perform the procedure. Procedures for which you do not have the necessary tools, instruments and skills should be performed by a trained technician.

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General technical data	4
Technical Data U.S. Standard Models.....	4
Technical Data U.S. Special Models.....	4
Programming instructions for the STG5 / STG7 and STW5 / STW7	5
Optional settings for the STG5 and STG7	7
Removal and replacement of parts for the STG5 and STG7	9
Right or left side panel	9
Top cover	9
Knob.....	9
Instrument panel.....	10
Electric panel.....	10
Display	11
Panel and foil assembly.....	11
Namepanel.....	11
Quartz lamp	12
Power section	12
High limit thermostat	13
Main switch	13
Magnetic switch	14
Blower motor.....	14
Blower motor bottom rotisserie (stacked stg)	15
PT550 sensor	15
Heating element	16
Drive motor.....	16
Door adjustment (left side)	17
Door glass inside.....	17
Door glass outside.....	18
Removal and replacement of parts for the STW5 and STW7	19
Blower motor.....	19
Thermometer.....	19
Thermostat	20
Main switch	20
Heating element	21
Halotherm lamp	21
Electrical tests and service procedures.....	22
PT500 Sensor test	22
Heating element test	22
Keypad test	23
Control location	24
Part 1: General troubleshooting list	25
Troubleshooting the STG5/7 Rotisserie	25
Troubleshooting the STW5/7 Rotisserie.....	26
Part 2: Analytic troubleshooting list	27
Servicing and repairing of the rotisseries STG5/7P.....	27
Servicing and repairing of the Warmers STW5/7	31
Exploded views & Partlists	33
Electrical diagrams	49

GENERAL TECHNICAL DATA

This manual covers the STG series rotisserie ovens and the STW series warmers. Ovens and warming cabinets come in two sizes. Ovens and cabinets will also be delivered in stacked versions.

- STG 5 – Oven with five spits (15 to 20 chickens)
- STG 7 – Oven with seven spits (28 to 35 chickens)
- STW 5 Warming cabinet. (25 to 30 chicken)
- STW 7 Warming cabinet. (35 to 40 chicken)

All of the information, illustrations and specifications contained in this manual are based on the latest product information available at the time of printing.

TECHNICAL DATA U.S. STANDARD MODELS

Type	STG 5	STW 5	STG 7	STW7
Power	6100W	2500W	9500W	3300W
Fuses needed with power connection 208 V, 3 ~ 60 Hz (3 phases without zero)	3x 20 A	-	3x 35 A	3x 15 A
Fuses needed with power connection 208 V, 1N ~ 60 Hz (1 phase with zero)	-	1x 15 A	-	-
Standard plug from factory	NEMA 15-30P 	NEMA 6-15P 	NEMA 15-50P 	NEMA 15-15P 
<i>Stacked STG/STW cabinets: each cabinet comes with separate power cord!!</i>				
Net weight	269 lbs.	220 lbs.	399 lbs.	331 lbs.
Gross weight	350 lbs.	269 lbs.	478 lbs.	363 lbs.
Height	33 7/8"	33 7/8"	40"	40"
Width	32 9/16"	32 9/16"	38 13/16"	38 13/16"
Depth	25 5/8"	25 5/8"	33 1/2"	33 1/2"

TECHNICAL DATA U.S. SPECIAL MODELS

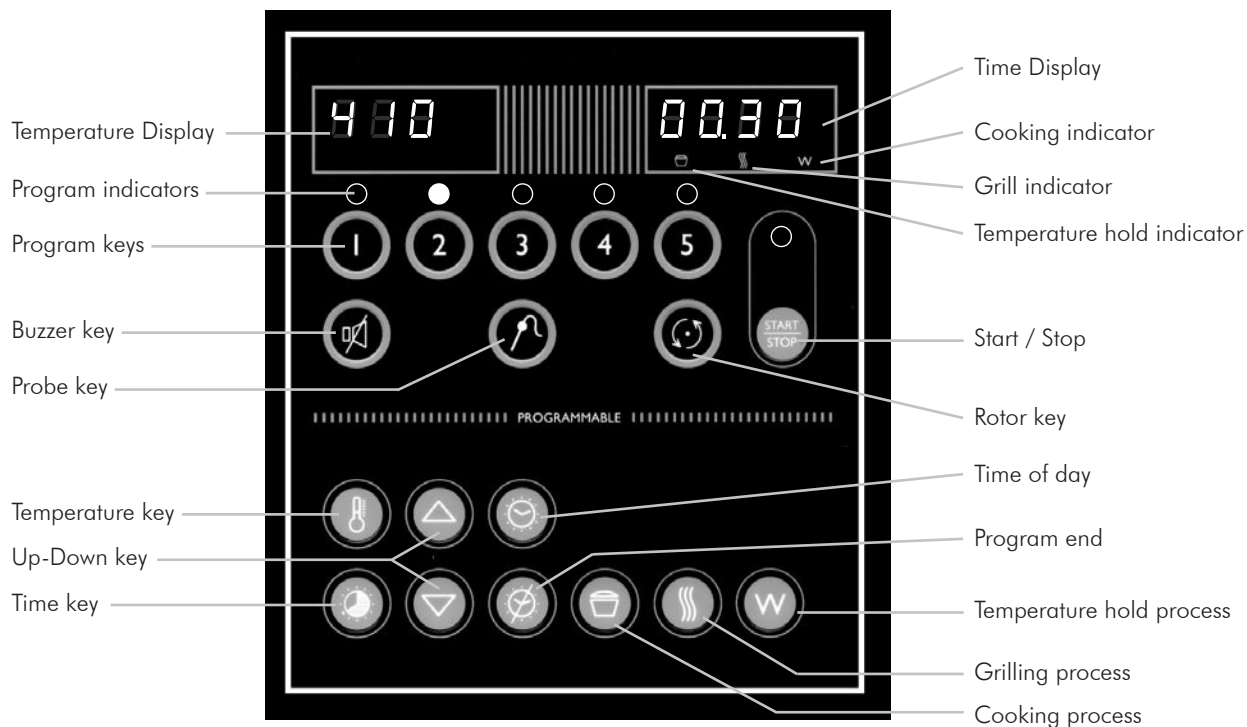
Type	STG 5	STG 7	STW7
Power	6100W	9500W	3300W
Fuses needed with power connection 208 V, 1N ~ 60 Hz (1 phase with zero)	1x 35 A	1x 60 A	1x 15 A
<i>Stacked STG/STW cabinets: each cabinet comes with separate power cord!!</i>			
Standard plug from factory	NEMA 6-50P 	n/a (fixed wiring)	NEMA 6-20P 

Tools

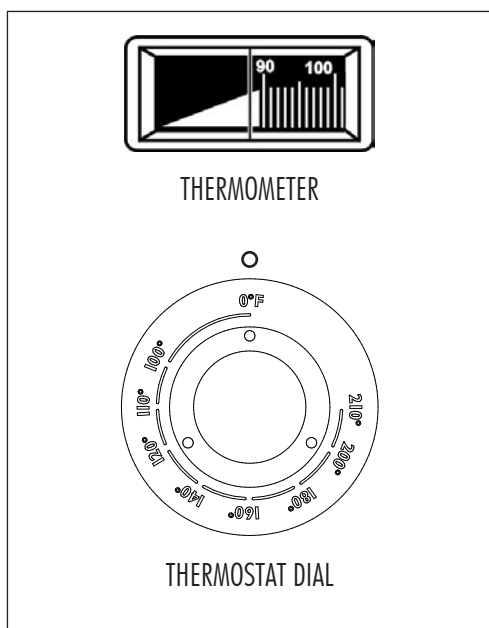
- Standard set of tools.
- Metric wrenches, sockets and hex socket key wrenches.
- VOM with AC current tester (any VOM with a sensitivity of at least 20,000 ohms per volt can be used).
- Insulation value tester (Megger).
- Temperature tester.
- TL 84919 Field Service Grounding Kit.

PROGRAMMING INSTRUCTIONS FOR THE STG5 / STG7 AND STW5 / STW7

DISPLAY AND KEYS



SETTING THE STW



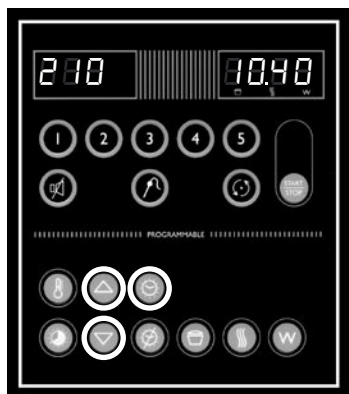
Turn thermostatdial to desired temperature

SETTING THE STG



When the main switch is turned to "1" the display lights up and the rotisserie is ON.

SETTING ACTUAL TIME

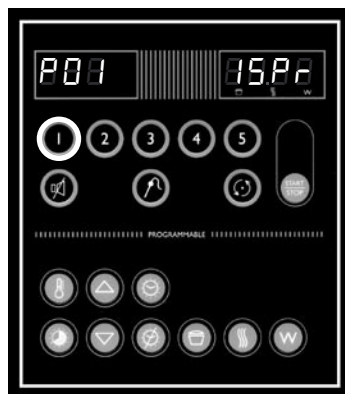


Press and hold *Time of day* key

Press *Up* or *Down* key

Release *Time of day* key

15 PROGRAMS



After the unit is switched-on the time display indicates: 15PR

Key 1:

1x = program 01

2x = program 06

3x = program 11

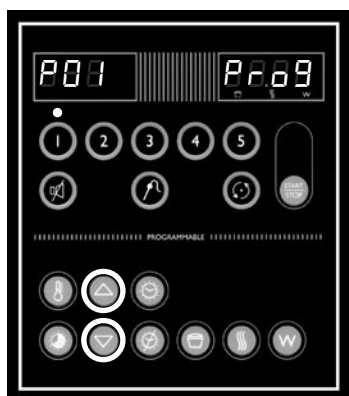
Key 2:

1x = program 02

2x = program 07

3x = program 12

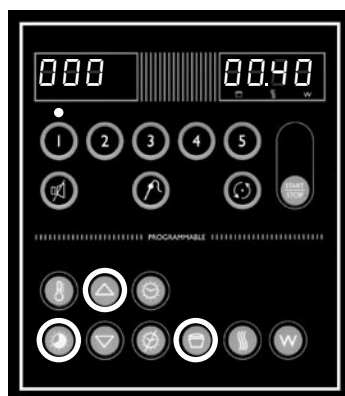
ENTERING A PROGRAM



Select Program number

Press both *Up* and *Down* keys during 2 seconds

FIRST GRILLING STEP (TIME)



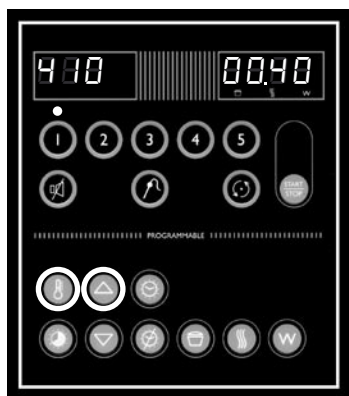
Press *Cooking process* key

Cooking symbol lights up

Press and hold the *Time* key

Press *Up* or *Down* key

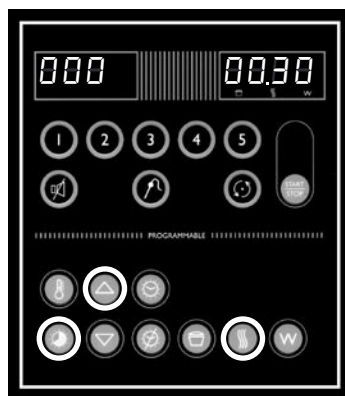
FIRST GRILLING STEP (TEMPERATURE)



Press and hold the *Temperature* key

Press *Up* or *Down* key

SECOND GRILLING STEP (TIME)



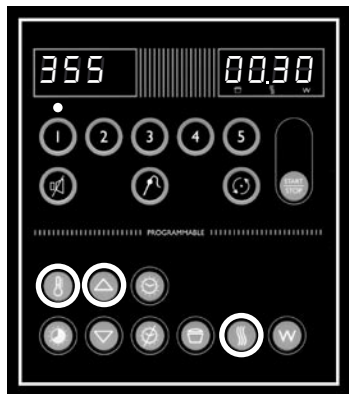
Press *Grilling process* key

Grilling symbol lights up

Press and hold the *Time* key

Press *Up* or *Down* key

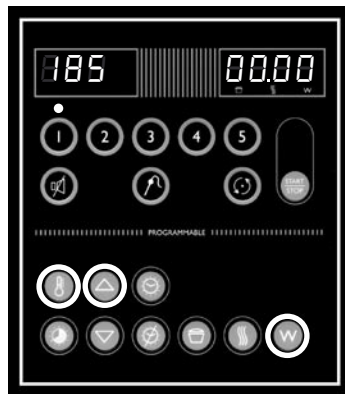
SECOND GRILLING STEP (TEMPERATURE)



Press and hold *Temperature* key

Press *Up* or *Down* key

TEMPERATURE HOLD



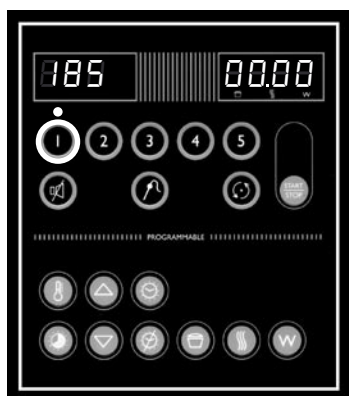
Press *Temperature Hold* process key

Temperature Hold symbol lights up

Press and hold the *Temperature* key

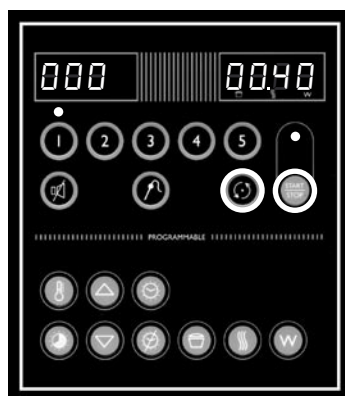
Press *Up* or *Down* key

LOADING PROGRAM



Press program number to load pre-set values

PROGRAM START & LOADING



Press *Start / Stop* key

On indicator lights up

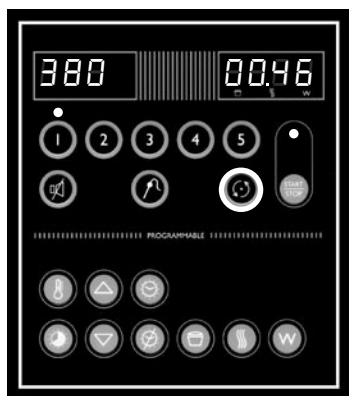
Press *Rotor* key to start turning the rotor

Press *Rotor* key again to stop

Load the rotisserie with products

OPTIONAL SETTINGS FOR THE STG5 AND STG7

INTERRUPTING ACTIVE PROGRAM



Press *Rotor* key

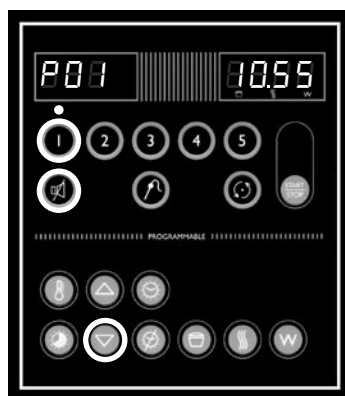
Heaters and front lamp switch off

Rotor stops

On indicator is blinking

Process time in hold

SET ADDITIONAL BUZZER SIGNAL

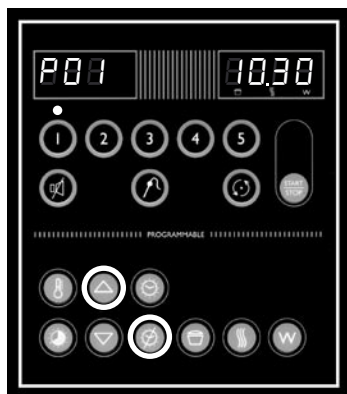


Select a pre-defined program

Press and hold *Buzzer* key

Press *Down* key

SET PROGRAM END TIME

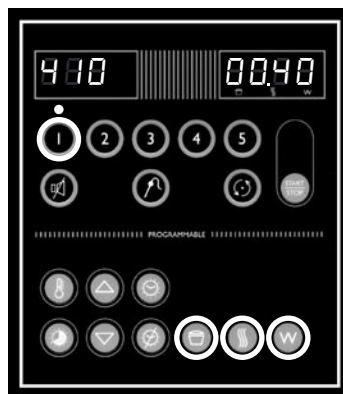


Select a pre-defined program

Press and hold the *Program end* key

Press *Up* key

DISPLAY SET TIME & TEMPERATURE



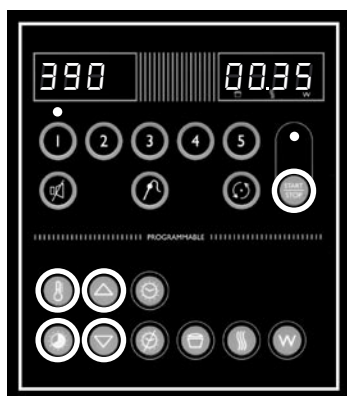
Select a pre-defined program

Press *Cooking, Grilling* or *Temperature hold* key

No time indication for *Temperature hold*

Visible during process or program selection

ADJUSTING ACTIVE PROGRAM



Press and hold *Temperature* or *Time* key

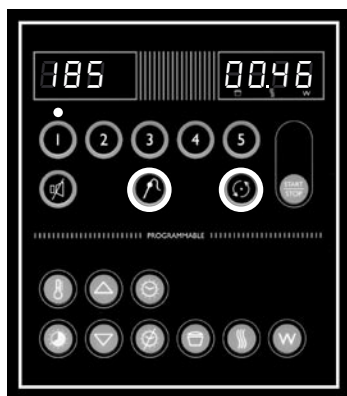
Adjust temperature or time with *Up* or *Down* key

PREHEAT INDICATION



Under 40°C (104°F) the display shows *PRH*

TEMPERATURE PROBE (OPTIONAL)



Press the *Rotor* key

Insert the probe in the meat up to the core

Press *Temperature sensor* key; after 20 seconds the temperature reading switches off

INDICATIONS DURING PROCESS

- Process indicators shows actual process after completion indicator switches off
- Time display shows remaining program time which is the sum of the remaining cooking and grilling time
- Temperature display indicates actual temperature in the grill. Under 40°C (104°F) the display shows *PRH* (preheat)
- When remaining time reaches 0, the process indicators and the *On*-indicator switches off

REMOVAL AND REPLACEMENT OF PARTS FOR THE STG5 AND STG7

WARNING: Disconnect the electrical power to the machine at the main circuit box. Place a tag on the circuit box indicating the circuit is being serviced.

RIGHT OR LEFT SIDE PANEL



1. Remove the screws that secure the panel to the frame.
2. Remove the panel.
3. Reverse the procedure to install.

TOP COVER



1. Remove the left side panel according prior procedure.
2. Remove the screws securing both large and small top covers.
3. Remove the top cover. (Lift at left side and remove to the left).
4. Reverse the procedure to install.

Note: STG 5 has an optional special top cover for access to the circulation blower. Standard no cover for the blower.

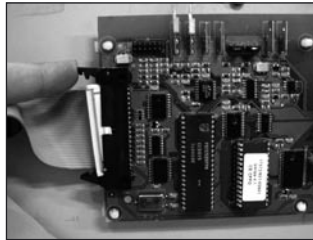
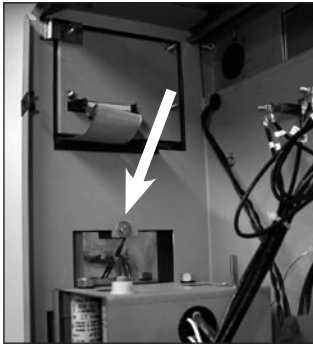
KNOB



1. Remove cover plate on the knob with a small screw driver.
2. Loosen the screw inside the knob.
3. Remove the knob with ring.
4. Reverse the procedure to install.

Note: check that the ring behind the knob is in the right position and runs free from the panel.

INSTRUMENT PANEL

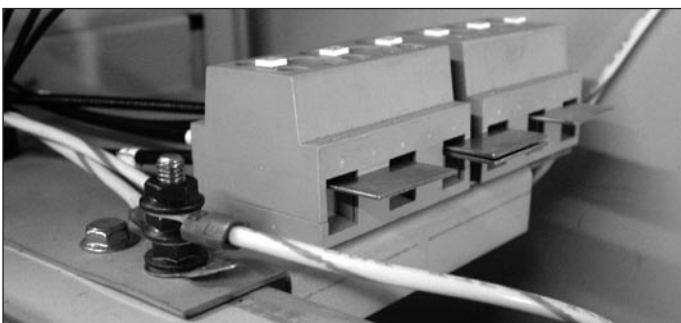


1. Remove the right side panel according prior procedure.
2. Remove the knobs according prior procedure.
3. Remove the screw that secures the panel.
4. Remove the 2 bolts on the backside of the instrument panel (top and bottom side, only for the STG 7).
5. Remove the screws that secure the meat probe holder and remove the holder (if supplied).
6. Remove the flatcable on the power section.
7. Remove the clip on the back, top left side that secures panel and frame.
8. Remove the instrument panel.
9. Reverse the procedure to install.

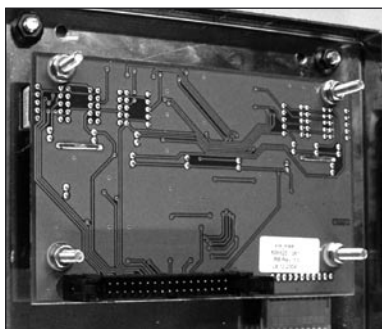
ELECTRIC PANEL



1. Remove the instrument panel according prior procedure.
2. Remove on the front side the screws that secure the panel.
3. Remove on the inside bottom of the electric panel the bolt and nuts.
4. Disconnect the wiring.
5. Slide the electrical panel backwards.
6. Reverse the procedure to install.

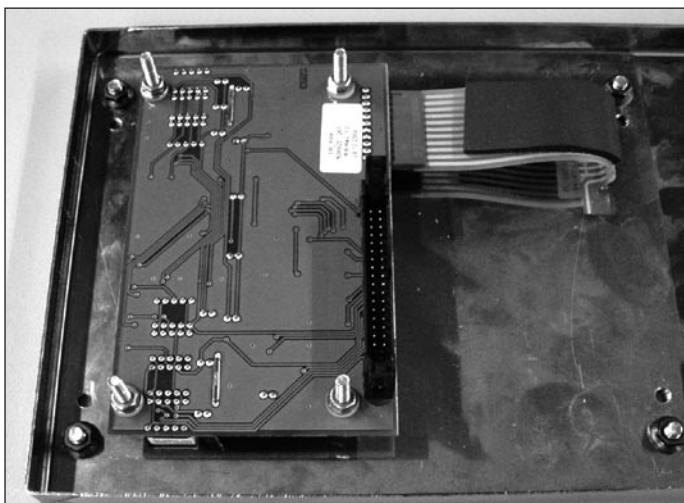


DISPLAY



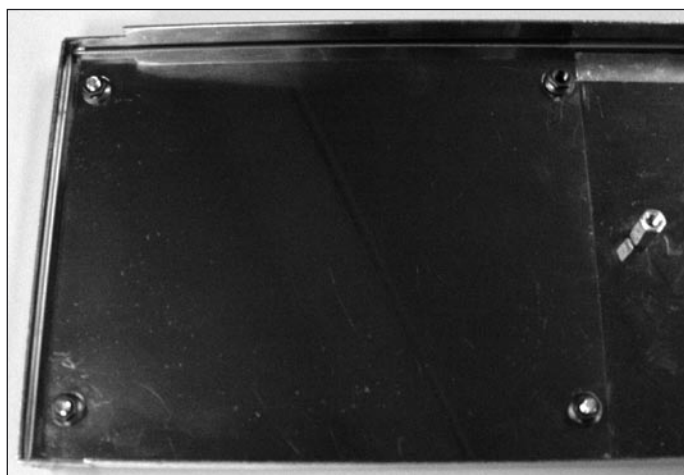
1. Remove the right side panel according prior procedure.
2. Disconnect the flatcable on the display.
3. Remove the clip on the back, top left side that secures panel and frame.
4. Remove the nuts and washers on the backside of the display and remove the metal cover.
5. Remove the nuts and plastic rings that secure the board and remove the board. Do not forget to disconnect the blue connector on the board.
6. Reverse the procedure to install.

PANEL AND FOIL ASSEMBLY



1. Remove the instrument panel according prior procedure.
2. Remove the display according prior procedure.
3. Remove the nuts that secure the panel with foil and remove panel.
4. Reverse the procedure to install.

NAMEPANEL



1. Remove the instrument panel according prior procedure.
2. Remove the 4 nuts that secure the panel and remove panel.
3. Reverse the procedure to install.

QUARTZ LAMP

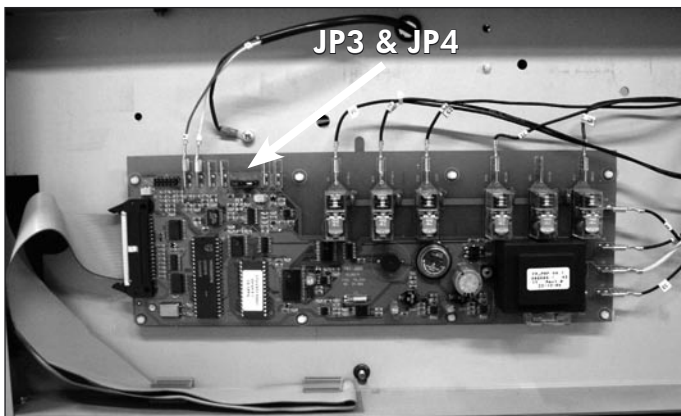


Caution: Do not touch the glass with your hands. The moisture from your hands could affect the live span of the lamp. This moisture can be removed with alcohol while the lamp is cold.

Note: Use a clean rag or paper towel to replace the lamp.

1. Remove the insulators of the lamp.
2. Remove the bolt from each end of the lamp and remove the lamp.
3. Install the lamp with the painted side towards the top of the oven. Hold the metal when tightening the bolts to prevent the metal from twisting and damaging the lamp.
4. Tighten the insulators evenly to prevent damage.

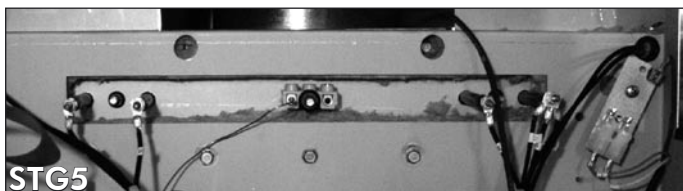
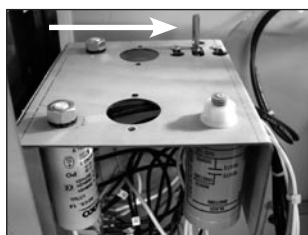
POWER SECTION



1. Remove the right side panel according prior procedure.
2. Disconnect wiring and flatcable on the board.
3. Remove the board from the clips by pressing the clips together.
4. Reverse the procedure to install.

Note: When installing new board, ensure that JP3 and JP4 on new board are set the same as on the old board.

HIGH LIMIT THERMOSTAT



1. Remove the right side panel according prior procedure.
2. Remove the suction and fan plate on the inside of the oven.
3. (STG 5 only) Remove the nut on the clamp and slide clamp towards yourself. Loosen the screw in the clamp that secures the probe and remove the probe.
4. (STG 7 only) Remove the thermostat-probe from the clip in the oven and guide it outside through the opening in the side wall.
5. Remove the screws on the electric panel that secure the thermostat.
6. Remove the thermostat and disconnect the wiring.
7. Reverse the procedure to install.

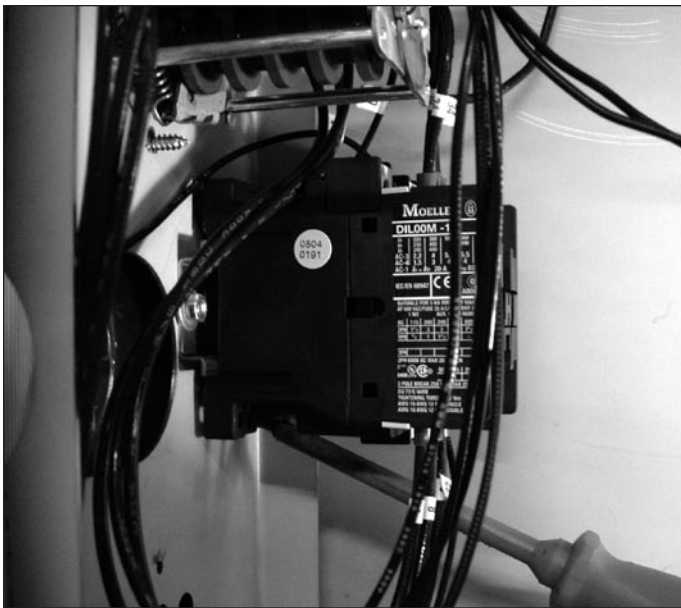
Note: Set the new high limit thermostat to its maximum position.

MAIN SWITCH



1. Remove the instrument panel according prior procedure.
2. Loosen the screws on the electric panel that secure the switch.
3. Remove the switch and disconnect the wiring.
4. Reverse the procedure to install.

MAGNETIC SWITCH

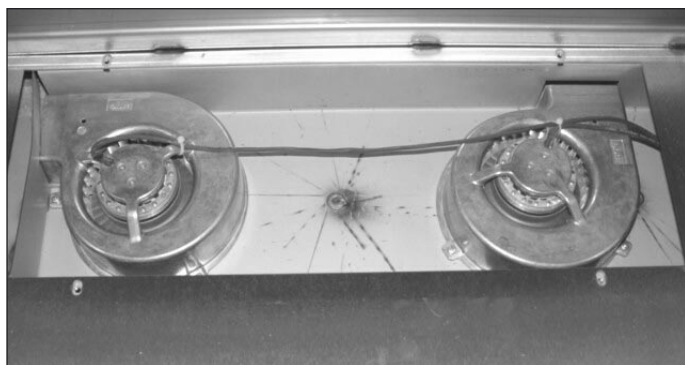


1. Remove the right side panel according prior procedure.
2. Disconnect the lead wires to the switch.
3. Push down on the locking tab and lift out and then up to remove it from the mounting bracket.
4. Reverse the procedure to install.

BLOWER MOTOR



1. Remove the right side panel and the top cover according to prior procedures.
2. Remove the rotor discs, suction and fan plate in the oven.
3. Remove the wing nut on the fan blade and remove fan blade. (Left handed threads)
4. Disconnect wiring of the motor.
5. Remove the screws that secure the motor and remove the motor.
6. Reverse the procedure to install.



Note: The blowers are equipped with a capacitor. Check the direction of rotation of the motor (clockwise) and change the wiring if necessary.

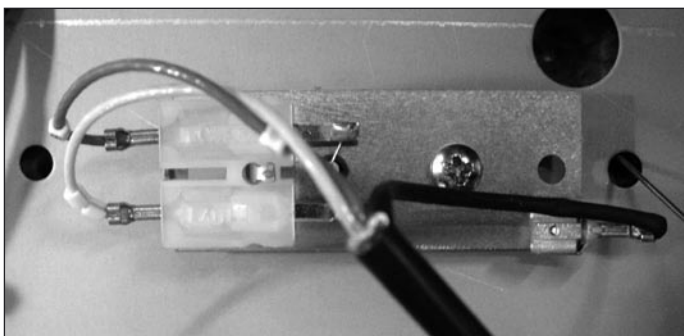
BLOWER MOTOR BOTTOM ROTISSERIE (STACKED STG)



1. Remove the right side panel according prior procedures.
2. Remove the rotor discs, suction and fan plate in the bottom oven.
3. Remove the wing nut on the fan blade and remove fan blade. Left handed threads.
4. Remove fat drawer from upper oven.
5. Remove the bolts that secure the intermediate plate and remove this plate.
6. Remove the drip trays from the upper oven.
7. Remove the bolts that secure the top plate (STG 5 must have special top cover!) and remove the top plate.
8. Disconnect wiring of the motor.
9. Remove the screws that secure the motor and remove the motor.
10. Reverse the procedure to install.

Note: The blowers are equipped with a capacitor. Check the direction of rotation of the motor (clockwise) and change the wiring if necessary.

PT550 SENSOR



1. Remove the right side panel according to prior procedure.
2. Disconnect the wiring of the sensor.
3. Remove the screw that secures the sensor and remove the sensor.
4. Reverse the procedure to install.

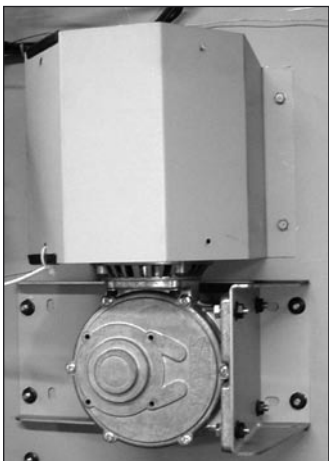
Note: The wiring cable is an insulated cable with an earthing screen.

HEATING ELEMENT



1. Remove the rotor discs, right side panel, suction and fan plate according prior procedures.
2. Disconnect the wiring from the element.
3. Remove the mounting nut.
4. Remove the element from the mounting clip and pull it from the wall.
5. Reverse the procedure to install.

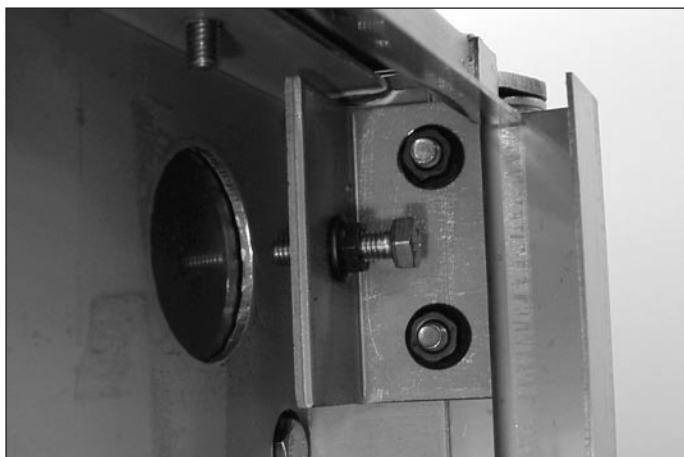
DRIVE MOTOR



1. Remove the right side panel and rotor discs according prior procedure.
2. Disconnect the wiring of the motor. Check where the wire, marked A is connected.
3. Remove the screws that secure the fan cover and remove the cover.
4. (STG 5 only) Remove the nuts that secure the motor and remove the motor.
5. (STG 7 Only) Set the drive arm in a position vertical downwards. This can be done manually or by turning the fan blade by hand.
6. Mark the position of the motor support with a marker.
7. Remove the bolts that secure the motor and the nuts that secure the motor support and remove the motor.
8. Check the white Teflon ring. Replace if necessary.
9. Install the fan blade on the new motor.
10. Reverse the procedure to install.

Note: Always make a test run on maximum temperature to insure the motor is well mounted and adjusted.

DOOR ADJUSTMENT (LEFT SIDE)



1. Remove the left side panel according prior procedure.
2. Loosen the nuts of the upper hinge. The door must be closed.
3. Loosen the locknut and adjust the bolt in or out to adjust the door.
4. Tighten the nuts of the hinge and mount the left-hand panel.

DOOR GLASS INSIDE



1. Lift the door upward out of the hinges and place on a table.
2. Remove the cap nuts and rings on the profiles of the door.
3. Remove the profiles from the glass.
4. Mount the profiles on the new glass. Do not forget the nylon rings inside the holes and the rings between metal and glass.
5. Mount the cap nuts and rings. Note! Tightening of nuts max.4.2 Nm.
6. Place the door in the hinges.

DOOR GLASS OUTSIDE



1. Lift the inner door out of the hinges and lay aside.
2. Remove the left side panel according prior procedure.
3. Remove the 2 nuts behind the top hinge. The door must be closed.
4. Hold the door on both sides and move this towards yourself, before lifting it out of the hinges. Place the door with the rounded side down on a table.
5. Remove the screws, cap nuts and rings on the profiles of the door and remove the profiles.
6. Mount the profiles on the new glass. Do not forget the nylon rings inside the holes and the rings between metal and glass.
7. Reverse the procedure to install.

REMOVAL AND REPLACEMENT OF PARTS FOR THE STW5 AND STW7

WARNING: Disconnect the electrical power to the machine at the main circuit box. Place a tag on the circuit box indicating the circuit is being serviced.

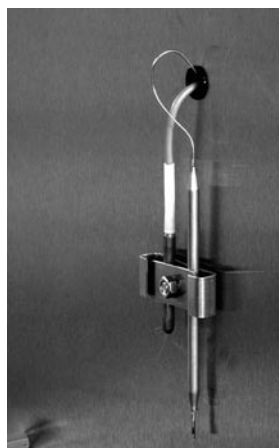
BLOWER MOTOR



1. Remove the right side panel according prior procedure.
2. Remove the racks and bottom plate.
3. Remove the cap nuts that secure the fan plate and remove fan plate.
4. Remove the wing nut on the fan blade and remove fan blade. Left handed threads.
5. Disconnect wiring of the motor.
6. Remove the screws that secure the motor and remove the motor.
7. Reverse the procedure to install.

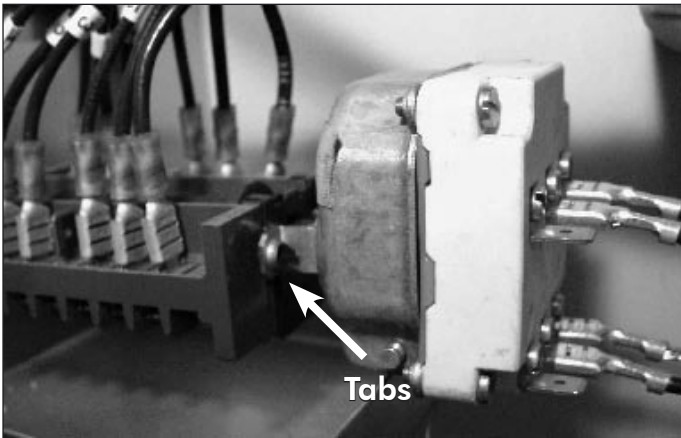
Note: The blowers are equipped with a capacitor. Check the direction of rotation of the motor and change the wiring if necessary.

THERMOMETER



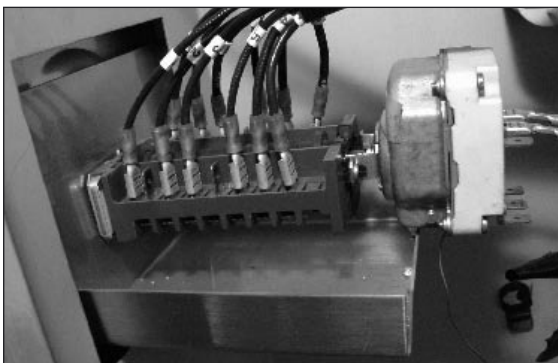
1. Remove the right side panel and the fan plate according prior procedures.
2. Remove the thermometer probe from the clamp inside the cavity and guide it outside through the opening.
3. Remove the thermometer by pushing in the clamps on both sides.
4. Reverse the procedure to install.

THERMOSTAT



1. Remove the right side panel and the fan plate according prior procedures.
2. Remove the thermostat probe from the clamp inside the cavity and guide it outside through the opening.
3. Disconnect the wiring from the thermostat.
4. Remove the thermostat from the main switch by squeezing the tabs and pull the thermostat away.
5. Reverse the procedure to install.

MAIN SWITCH

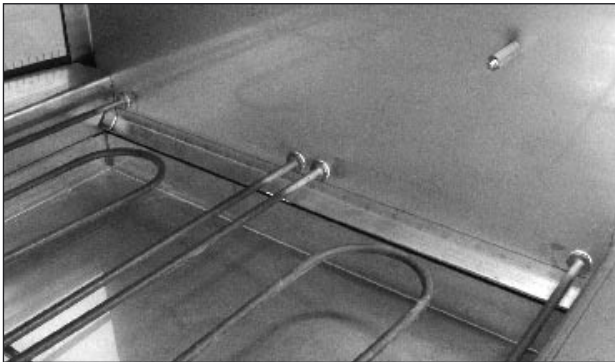


1. Remove the right side panel according prior procedure.
2. Remove the knob according prior procedure.
3. [STG7 only] Remove the 2 bolts on the back-side of the instrumentpanel
4. Remove the screw that secures the instrumentpanel and remove this panel.
5. Remove the screws that secure the main switch and remove the switch.
6. Disconnect the wiring from the switch.
7. Remove the thermostat from the main switch according prior procedure.
8. Reverse the procedure to install.

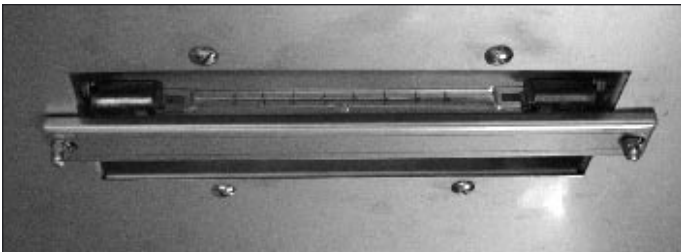
HEATING ELEMENT



1. Remove the right side panel, racks, bottom plate and the fan plate according prior procedures.
2. Disconnect the wiring from the element.
3. Remove the nuts and rings that secure the element and remove the element.
4. Reverse the procedure to install.



HALOTHERM LAMP



1. Remove the nuts of the cover profile.
2. Push the lamp to either side and pull it down to remove the lamp.
3. Insert one end of the new lamp in the socket and push it in. Align the other end of the lamp with the socket and allow the spring tension to push the lamp in place.
4. Replace the cover profile.



Note: Be sure that the "drop" on the lamp is on the bottom side.

ELECTRICAL TESTS AND SERVICE PROCEDURES

WARNING: Disconnect the electrical power to the machine at the main circuit box. Place a tag on the circuit box indicating the circuit is being serviced.

PT500 SENSOR TEST

Temperature		Resistance
°F	°C	± 5 Ohms
60	16	531
70	21	541
80	27	553
90	32	562
100	38	574
125	52	601
150	65	626
200	94	681
250	121	732
350	177	837
450	233	940

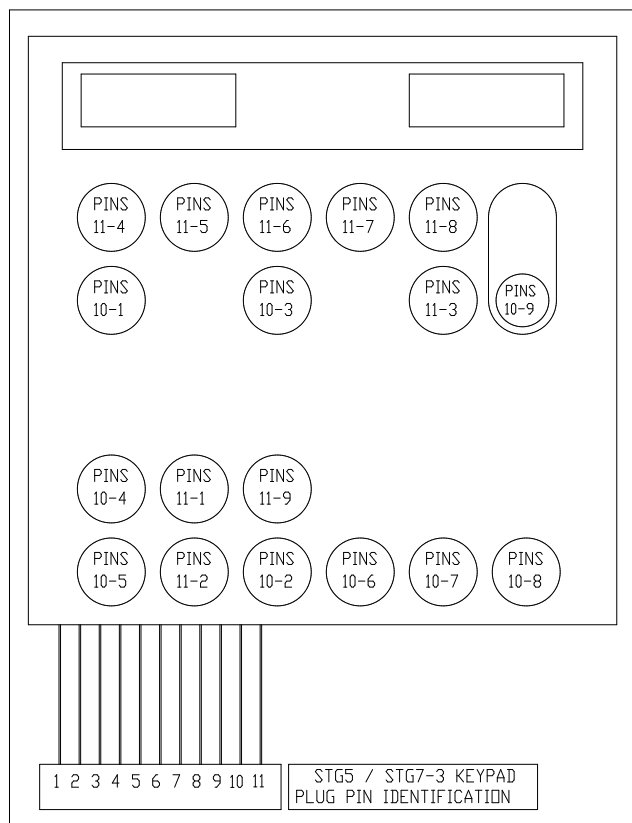
1. Remove the right side panel according prior procedure.
2. Remove the wiring from the sensor.
3. Connect a temperature sensor to the probe for comparison.
4. Test the probe with an Ohmmeter.

HEATING ELEMENT TEST

Type	Wattage/Voltage	Resistance Ω -5% + 10%	Current A
STG 5	2000 / 208	21.5	9.6
	2000 / 230	26.5	8.6
STG 7	2100 / 208	20.5	10.0
	2100 / 230	25.0	9.1
STG 7	3100 / 208	14.0	14.9
	3100 / 230	17.0	13.4
STW 5	2500 / 230	21.0	10.8 (9.8 at 208V)
STW 7	1500 / 230	35.0	6.5 (5.9 at 208V)

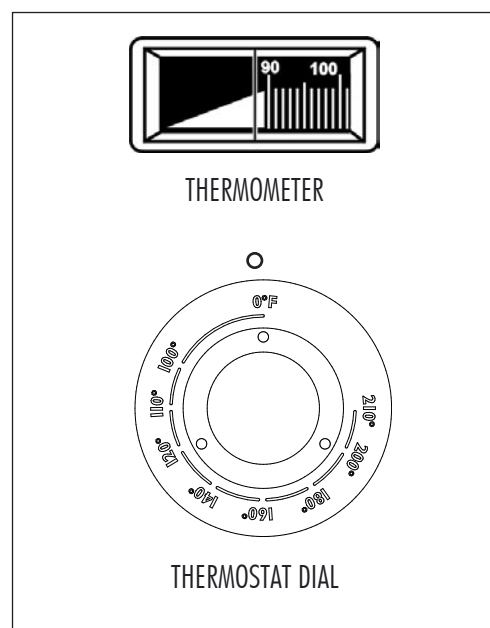
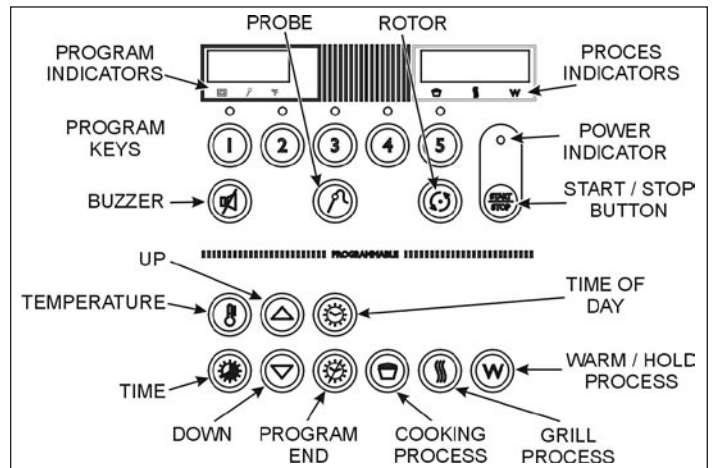
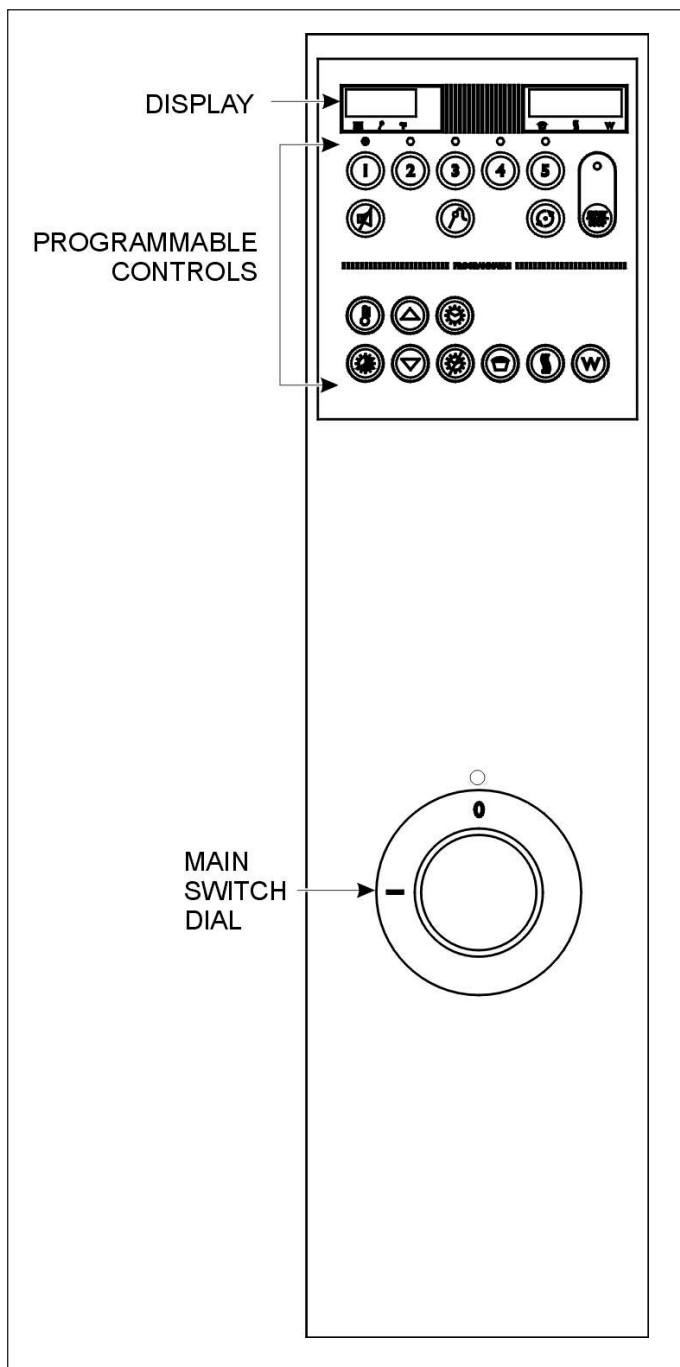
Note: When testing the resistance of the element remove the wiring.

KEYPAD TEST



1. Remove the instrument panel according prior procedure.
2. Remove the display according prior procedure.
3. Remove the nuts that secure the panel with foil and remove panel.
4. Use a multimeter to test. Connect the measuring pins to the cable plug pins for each key to be tested as indicated in the diagram. You can set the multimeter on a beep signal or set it on resistance measuring. Press the key to be tested and the meter should give a beep signal or indicates a resistance less than 200 Ohms.

CONTROL LOCATION



PART 1: GENERAL TROUBLESHOOTING LIST

TROUBLESHOOTING THE STG5/7 ROTISSERIE

Symptom	Possible causes
No power to oven controls.	1. Main breaker open. 2. Fuse F1 burned 3. Main switch malfunction 4. Wiring loose.
Main fuse or breaker blows.	1. Wiring incorrectly. 2. Heating element, drive motor, blower or magnetic switch shorted. 3. Wiring shorted.
Drive motor does not run in program mode.	1. Main braker on L2 (STG5) or L1 (STG7) open (also no readings on display). 2. Fuse F1 burned (also no readings on display). 3. Capacitor malfunction. 4. Wiring loose. 5. Main switch malfunction. 6. Motor malfunction.
Blower motor does not run.	1. Capacitor malfunction. 2. Wiring loose. 3. Motor inoperative.
Oventemperature differs from temperature setting in program mode.	1. Safety thermostat malfunction. 2. Blower motor(s) inoperative (turning direction?) 3. Electronic control inoperative. 4. PT-500-sensor malfunction. 5. Dirty fanguard or fanblade(s).
All heating elements out, one quartzlamp and blowers operate while oven cavity is below set temperature.	1. Safety thermostat malfunction. 2. Contactor inoperative. 3. Wiring loose.
Oven temperature does not reach desired temperature in program mode.	1. Safety thermostat malfunction. 2. PT-500-sensor malfunction. 3. Electronic control inoperative. 4. Heater(s) inoperative. 5. Incorrect line voltage.
No display and/or keypad does not function.	1. Loose flatcable from display to electronic control. 2. Fuse F4 (63mA) burned. 3. Fuse F1 (10A) burned. 4. Display and/or electronic control malfunction.

TROUBLESHOOTING THE STW5/7 ROTISSERIE

Symptom	Possible causes
No power to warmer controls.	1. Main breaker open. 2. Switch malfunction. 3. Wiring loose.
Main fuse or breaker blows.	1. Wiring incorrectly. 2. Heating element or blower shorted. 3. Wiring shorted.
Blower motor does not run.	1. Capacitor malfunction. 2. Wiring loose. 3. Motor inoperative.
Lamps do not operate.	1. Lamp malfunction. 2. Switch malfunction. 3. Wiring loose.
Oven temperature does not reach desired temperature.	1. Incorrect line voltage. 2. Heater(s) inoperative. 3. Thermometer malfunction. 4. Thermostat malfunction. 5. Blower motor inoperative (turning direction?) 6. Dirty fanguard or fanblade.
Products dry out too fast.	1. No water in tray.

PART 2: ANALYTIC TROUBLESHOOTING LIST

SERVICING AND REPAIRING OF THE ROTISSERIES STG5/7P

This is an analytic description for servicing and repairing all major parts of the rotisseries and warmers. It consists off 4 basic steps to recognize and solve the problems. These steps are:

1. Symptoms.
2. Possible causes.
3. Solving of the problem: checking/action.
4. Replacing of parts and testing.
 - a. Replacing is described in the service manual.
 - b. For testing see programming of rotisserie on page 5 in this manual.

Description of part	Symptoms	Possible causes	Solving: checking/action
Inside door	Broken glass	Slamming of door.	Give instruction to operator.
		Fastening bolts and nuts are loose.	Tighten all fastenings.
		No sealing ring between steel and glass.	Mount new glass with sealing rings between glass and steel.
Outside door	Broken glass	Slamming of door.	Give instruction to operator.
		Fastening bolts and nuts are loose.	Tighten all fastenings.
		No sealing ring between steel and glass.	Mount new glass with sealing rings between glass and steel.
	Door adjustment	Door not well adjusted and closes against bottom side.	Adjust door on hinge and tighten the hinge plate.
Heating element	Rotisserie doesn't reach adjusted temperature	Wiring.	Check the wiring. Check the power on the element.
		Element malfunction.	Check the current with AC current tester. See table on page 22.
	Duration of grilling time is too long	Wiring.	Check the wiring.
		Element malfunction.	Check the current with AC current tester. See table on page 22.

PT-sensor	Temperature indication on display runs up very fast and over the maximum of 250°C -482°F 290°C - 550°F in 20 seconds)	No connection between wires.	Check the wiring. Check thin wire on sensor.
	Temperature indication on display doesn't go up and stays on Prh	Full contact between wires of sensor.	Check the wiring.
	Rotisserie doesn't reach adjusted temperature	Short circuit in sensor. Malfunction sensor. Sensor not in right position.	Measure resistance of sensor. This is zero. Measure resistance of sensor with a thermometer probe next to the sensor. See table in service manual. Check position of sensor.
	Temperature indication on display runs up too fast.	Malfunction sensor.	Measure resistance of sensor. See table on page 22.
Safety thermostat	Magnetic switch doesn't come in after starting of program	Wiring.	Check the wiring.
		Thermostat malfunction.	Check if the thermostat is making contact.
	Magnetic switch switches off before reaching the adjusted temperature in program	Thermostat malfunction. Thermostat probe not in right position.	Check if the thermostat is turned fully clockwise (contact closed). Check the position of the thermostat probe.
Main switch	No power to all, or some oven controls	Wiring.	Check the wiring on the switch.
		Malfunction of the cams on the switch.	Check the cams.
	Magnetic switch comes in, but one or more functions from the switch don't work.	Contacts burned.	Check the wiring. Check the power on all contacts. Check the contacts of the switch.
Magnetic switch	Magnetic switch doesn't come in	Wiring.	Check the wiring.
		Coil malfunction.	Check resistance of the coil. This should be 525Ω.
		Contact burned.	Check the contacts of the switch.
Foil on display	No possibility to make a program	Permanent contact of one, or more, membrane keys.	Check key functions. Check functions of foil. See table on page 23.
		Some keys don't function.	Check grey flat cable connection. Check green flat cable connection. Check functions after connecting a new grey flat cable.

Display and power board	No illumination on display	Wiring.	Check the wiring. Check the power on the board.
		Fuse burned.	Check the 63 mA fuse on the power board. Replacing of fuse for 100 mA is permitted.
		Flat cable.	Check grey flat cable connection. Check functions after connecting a new grey flat cable.
		Display malfunction.	Check functions after connecting a new display board.
		Power board malfunction.	Check functions after connecting a new power board.
	Some function doesn't work or stay activated.	Relay malfunction.	Check relay on function with problem.
	No possibility to make a program	Power board malfunction.	Check functions after connecting a new power board.
Capacitor	Drive motor or blower don't work	Wiring.	Check the wiring.
		Capacitor malfunction.	Check function after connecting a new capacitor. Checking of capacitor: Discharge capacitor with screwdriver. Set meter on MΩ and connect the pins of the meter on contacts, value runs up. Change the pins on contacts, value runs up again. This means the capacitor is OK.
Drive motor	Motor doesn't run	Wiring.	Check the wiring. Check the power to the motor.
		Coil malfunction	Check resistance of the coils. Between whiteA and white wire 234Ω Between whiteA and brown wire 117Ω Between white and brown wire 117Ω
		Reduction gearbox.	Check if reduction gearbox is blocked.
		Relay on power board.	Check power on relay X14.
	Motor runs after starting it up by hand	Capacitor malfunction.	Check capacitor (see capacitor) or connect new capacitor.
	Motor stops during process and comes in again after a period of time	Coil overheated, thermistor switches off (105°C – 221°F).	Check position of fan blade. Air is sucked up over the motor. Check cooling circuit of motor. Check if rotisserie is close to another heat source. Measure temperature motor during process.
	Fuse F1 or F2 burned	Short circuit in coil to earth	Check insulation value of coil with Megger on 500V. Minimum value is 0.5 MΩ.

Blower	Blower doesn't run	Wiring.	Check the wiring. Check the power on the blower.
		Coil malfunction.	Check resistance of the coils. Between blue and brown wire STG 7= 310Ω; STG 5= 310Ω Between blue and black wire STG 7= 320Ω; STG 5=190Ω Between brown and black wire STG 7= 630Ω; STG 5= 500Ω
		Relay on power board.	Check power on relay X9 and X10
	Blower runs after starting it up by hand	Capacitor malfunction.	Check capacitor (see capacitor) Or connect new capacitor.
	Blower stops during process and comes in again after a period of time	Coil overheated, thermistor switches off (150°C – 302°F).	Check cooling circuit of blower. Check if rotisserie is close to another heat source. Measure temperature blower during process.
	Temperature indication on display runs up very fast (180°C - 355°F after 5 minutes)	Blower doesn't turn and heat stays in top of cavity	Check the wiring. Check the power on the blower.
	Fuse F1 or F2 burned	Short circuit in coil to earth	Check insulation value of coil with a Megger on 500V. Minimum value is 0.5 MΩ.

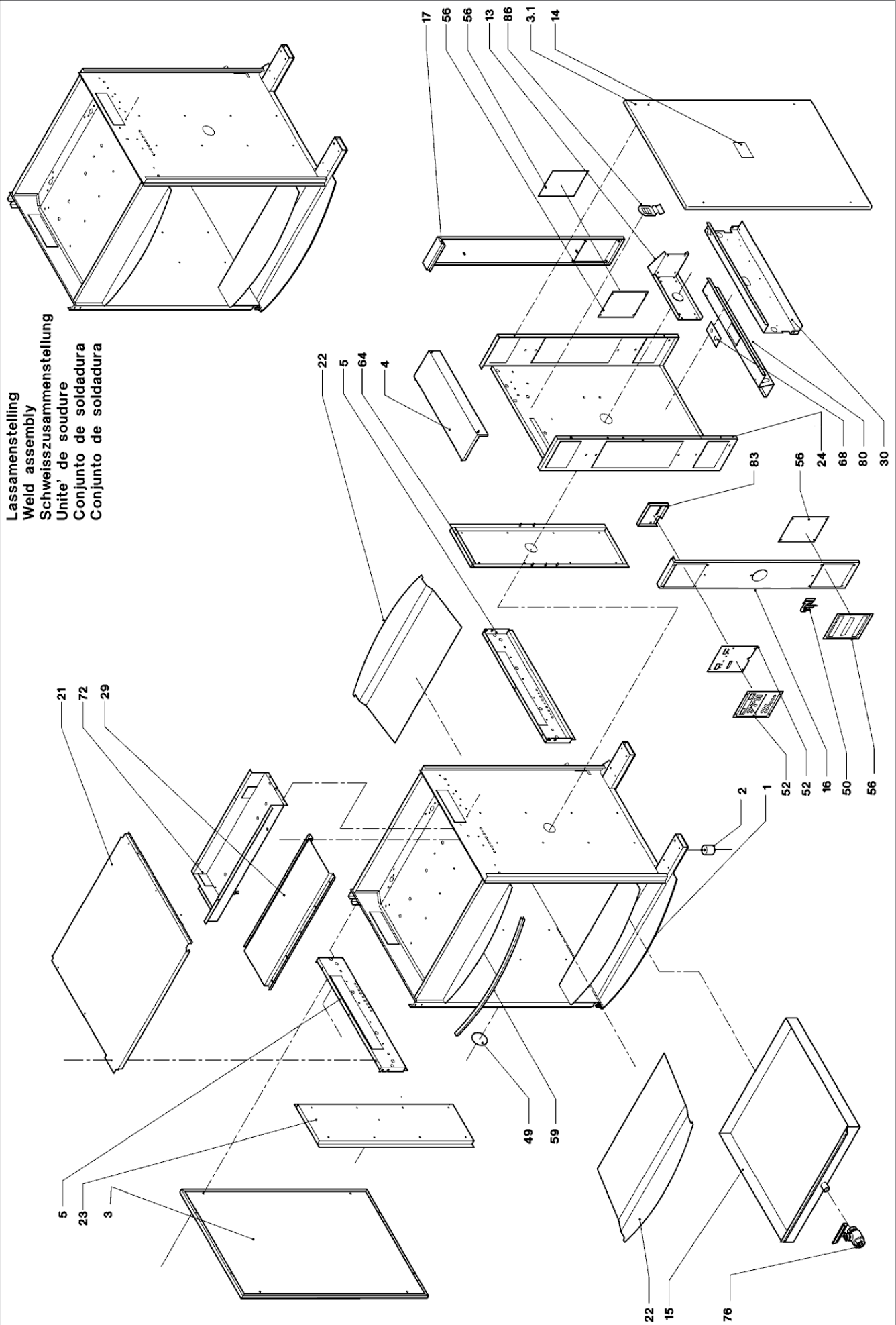
SERVICING AND REPAIRING OF THE WARMERS STW5/7

Description of part	Symptoms	Possible causes	Solving: checking/action
Outside door	Broken glass	Slamming of door. Fastening bolts and nuts are loose. No sealing ring between steel and glass.	Give instruction to operator. Tighten all fastenings. Mount new glass with sealing rings between glass and steel.
	Door adjustment	Door not well adjusted and closes against bottom side.	Adjust door on hinge and tighten the hinge plate.
Heating element	Warmer doesn't reach adjusted temperature	Wiring.	Check the wiring. Check the power on the element.
		Element malfunction.	Check the current with AC current tester. See table on page 22.
Thermostat	Warmer doesn't reach adjusted temperature	Wiring. Thermostat malfunction.	Check the wiring. Check if the thermostat is making contact. Check the position of the thermostat probe.
	Warmer doesn't heat up	Thermostat malfunction.	Check if the drive shaft behind the main switch is connected on the thermostat. Check if the thermostat is making contact.
Thermometer	Temperature indication differs from setting with knob	Thermometer malfunction	Check the position of the thermometer probe. Check function after connecting a new thermometer.
Main switch	No power to all, or some oven controls	Wiring.	Check the wiring on the switch.
		Malfunction of the cams on the switch.	Check the cams.
		Contacts burned.	Check the contacts on the switch.
Capacitor	Drive motor or blower doesn't work	Wiring. Capacitor malfunction.	Check the wiring. Check function after connecting a new capacitor. Checking of capacitor: Discharge capacitor with screwdriver. Set meter on MΩ and connect the pins of the meter on contacts, value runs up. Change the pins on contacts, value runs up again. This means the capacitor is OK.

Blower	Blower doesn't run	Wiring.	Check the wiring. Check the power on the blower.
	Blower runs after starting it up by hand Blower stops during process and comes in again after a period of time	Coil malfunction. Capacitor malfunction. Coil overheated, thermistor switches off (150°C – 302°F).	Check resistance of the coils. Between blue and brown wire= 310Ω Between blue and black wire= 320Ω Between brown and black wire= 630Ω Check capacitor (see capacitor), or connect new capacitor. Check cooling circuit of blower. Check if warmer is close to another heat source. Measure temperature blower during process.
	Fuse burned	Short circuit in coil to earth	Check insulation value of coil with a Megger on 500V. Minimum value is 0.5 MΩ.

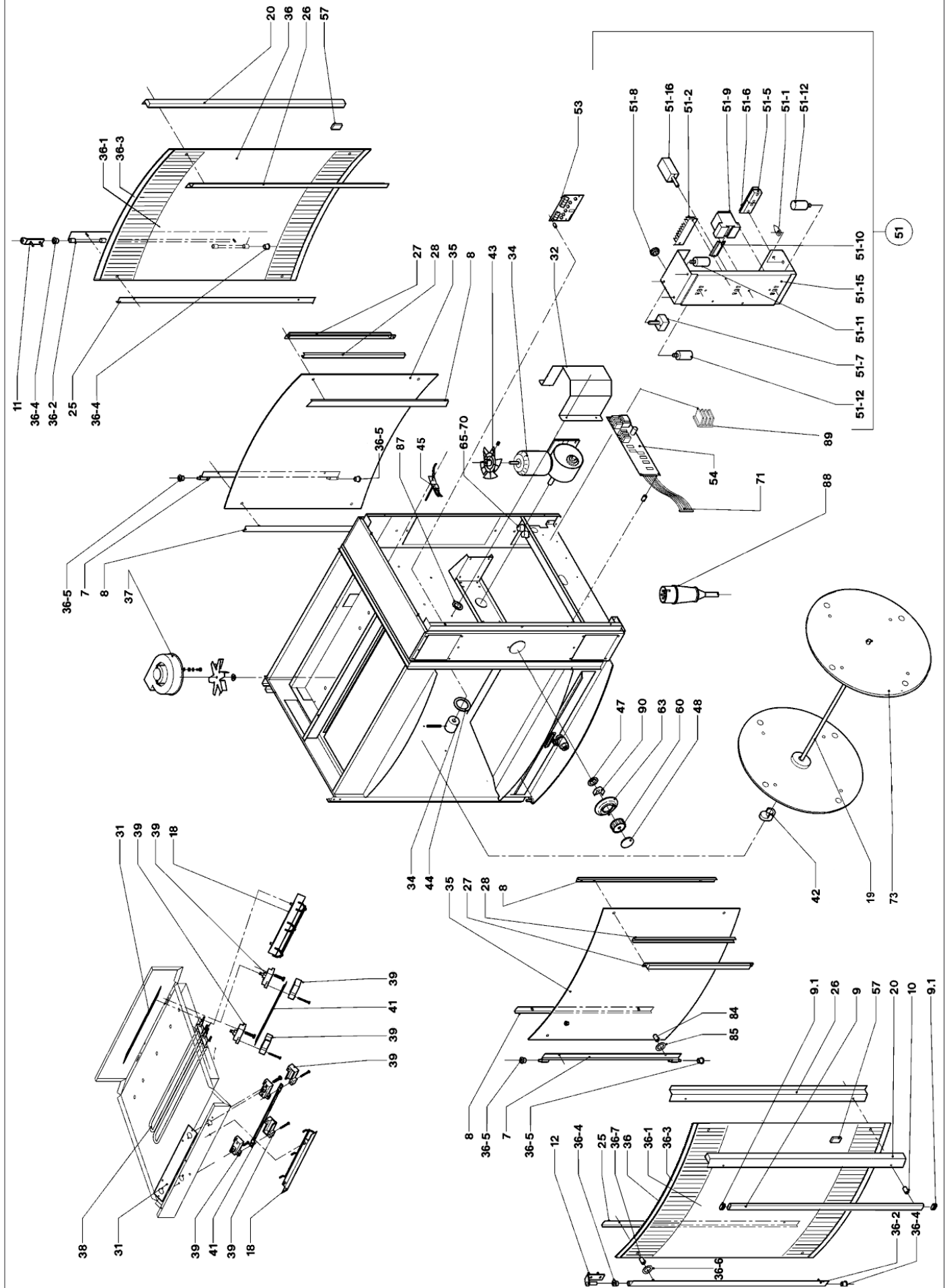
EXPLODED VIEWS & PARTLISTS

Lassamenstellung
Weld assembly
Schweisszusammenstellung
Unité de soudure
Conjunto de soldadura
Conjunto de soldadura



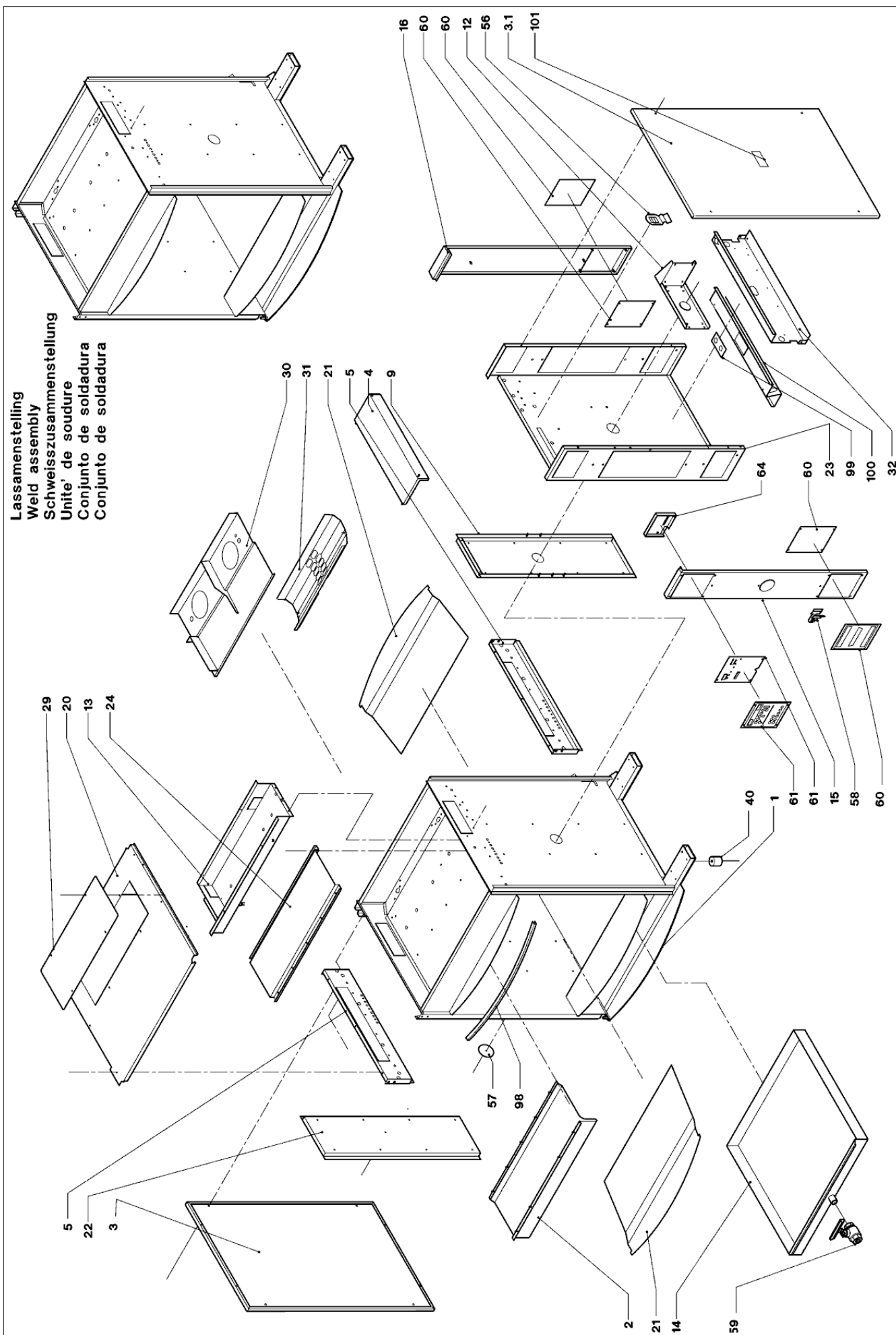
STG5 P - Sheet Iron Work

Item	Partnumber	Qty.	Description
1	9170446	1	Frame, ass.
2	9011260	4	Leg, rubber
3	9170428	1	Side panel, left
3-1	9170476	1	Plate, outer, right
4	9174061	1	Cover, removable
5	9170432	2	Side panel, top
13	9170444	1	Support, gear motor
14	9123467	1	Indication plate
15	9170458	1	Drawer
16	9170607	1	Operation panel
17	9174075	1	Panel, customer side
21	9174060	1	Cap, top
22	9172220	2	Bottom plate, coated
23	9174071	1	Reinforcement, side plate, left
24	9174072	1	Cover plate, machine components
29	9141845	1	Plate, air guide
30	9174073	1	Mounting plate
49	9112430	4	Washer, insulation support
50	9172053	8	Nut
52	9172045	1	Foil + backplate
56	9172040	2	Name plate Fri-Jado, foil + backplate
59	9172117	2	Sealing profile, Silicon L= 55 cm
64	9170445	1	Reinforcement, side plate, right
68	9174151	1	Plate, strain relief
72	9146544	1	Mounting plate, blower
76	9171008	1	Drain-tap with handle
80	9174141	1	Spark catcher
83	9174146	1	Protection plate, electric components
86	9073181	3	Strain relief

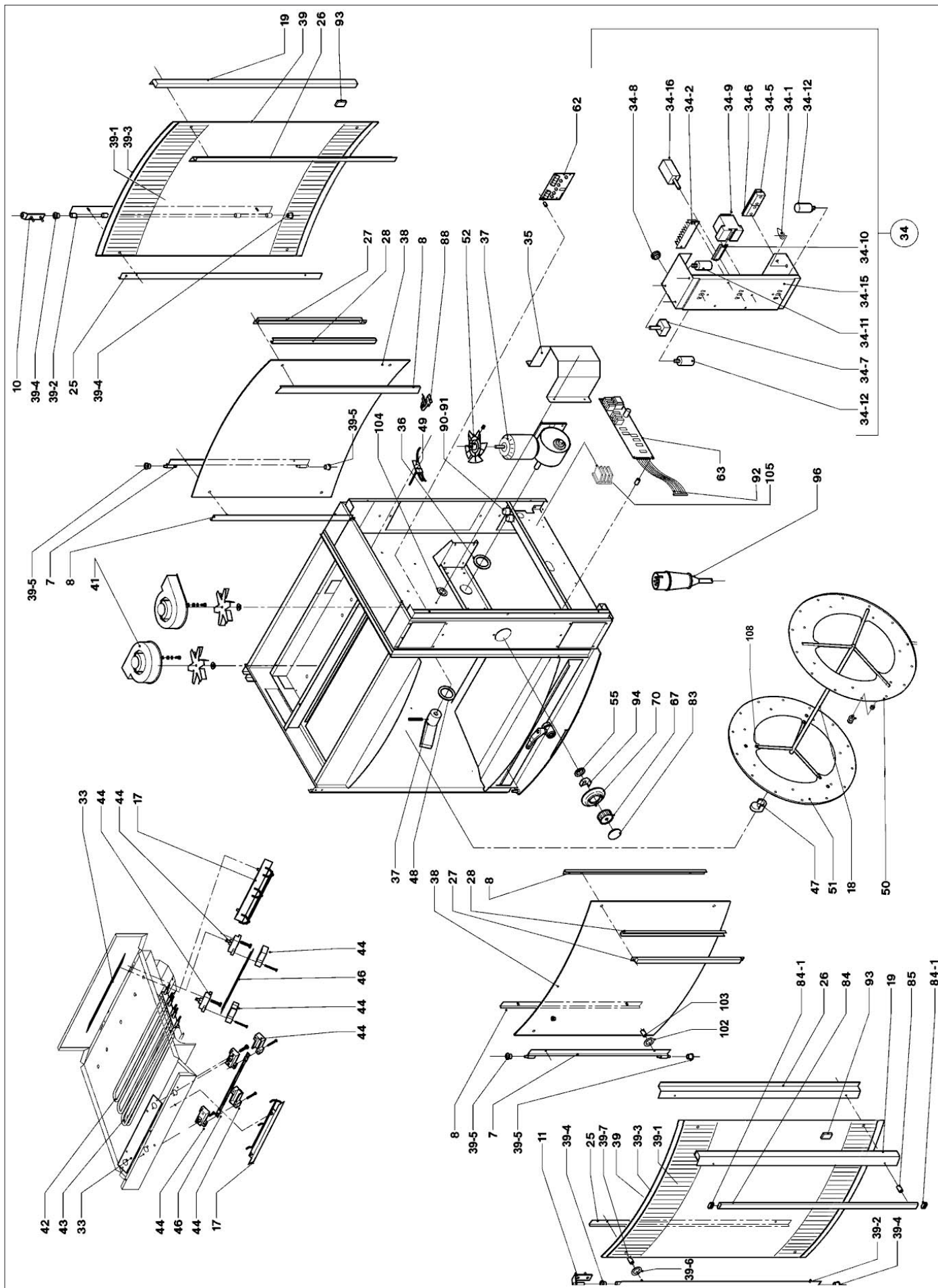


Item	Partnumber	Qt.	Description
47	9110802	1	Plug, TG
48	9172049	1	Cover, knob
51	9173051	1	Electric panel, ass.
51-1	0166555	1	Earth symbol
51-2	8033659	1	Connecting block, 9-pol.
51-5	9044564	1	Connecting block, 1,2,3
51-6	9044572	1	Connecting block, 4,5,6
51-7	9070531	1	Thermostat 50-250 °C
51-8	9070840	2	Grommet
51-9	9077070	1	Magnetic switch
51-10	9077088	1	Bracket, magnetic switch
51-11	9077101	1	Capacitor 2,5 mF
51-12	9110030	2	Capacitor 1,5 mF
51-15	9174106	1	Electric panel
51-16	9172328	1	Main switch
53	9110242	1	Display
54	9110276	1	Power section
57	9070141	44	Magnet block
60	9172021	1	Control knob, grey
63	9172037	1	Back plate, main switch 0-1
65	9044205	2	Fuse holder
70	9110250	2	Fuse, 10A
71	9172113	1	Flatcable, 34-pol.
73	9172251	2	Rotor disc 3 mm (5-holes), coated
84	9174163	8	Distance ring, innerglass 3 mm
85	9174162	24	Seal ring
87	9171018	2	Plug
88	9172404	1	Connecting cable with plug 15-30P
89	9151010	1	Connecting block
90	9172052	1	Locking ring, knob

Item	Partnumber	Qt.	Description
7	9170442	2	Hinge profile
8	9170443	4	Cover profile, inner glass
9	9174132	1	Door handle
9-1	9171014	2	Plug, door handle
10	9174133	2	Spacing pin
11	9170426	1	Hinge, right
12	9170427	1	Hinge, left
18	9116662	2	Protection, lamp
19	9172250	1	Rotor shaft, incl. disc studs, coated
20	9170464	2	Profile, magnet
25	9174079	2	Mounting profile, hinge side
26	9174083	2	Fastening, door handle
27	9174081	2	Holder, magnet
28	9174084	2	Profile
31	9112210	2	Mounting plate, lamp holder
32	9174161	1	Protection support
34	9173005	1	Gearmotor, complete with drive head
35	9172016	2	Glass, inner
36	9172108	2	Glass black, outer incl. hinge profile
36-1	9172020	2	Glass black, outer
36-2	9170441	2	Hinge profile
36-3	9172080	4	Protection profile
36-4	9172054	4	Brass bearing 8 mm
36-5	9172122	4	Brass bearing 8 mm, adjusted
36-6	9174162	8	Seal ring
36-7	4289966	8	Distance ring, outerglass
37	9140027	1	Blower
38	9140001	2	Heating element 208 V, 2000 W
39	9110023	4	Lamp holder, cap + housing
41	9056082	2	Lamp, quartz, 1000 W
42	9172062	1	Steel bearing, 12 mm
43	9172078	1	Fanblade, motor
44	9073131	1	Sealing ring
45	9070094	1	Temperature sensor

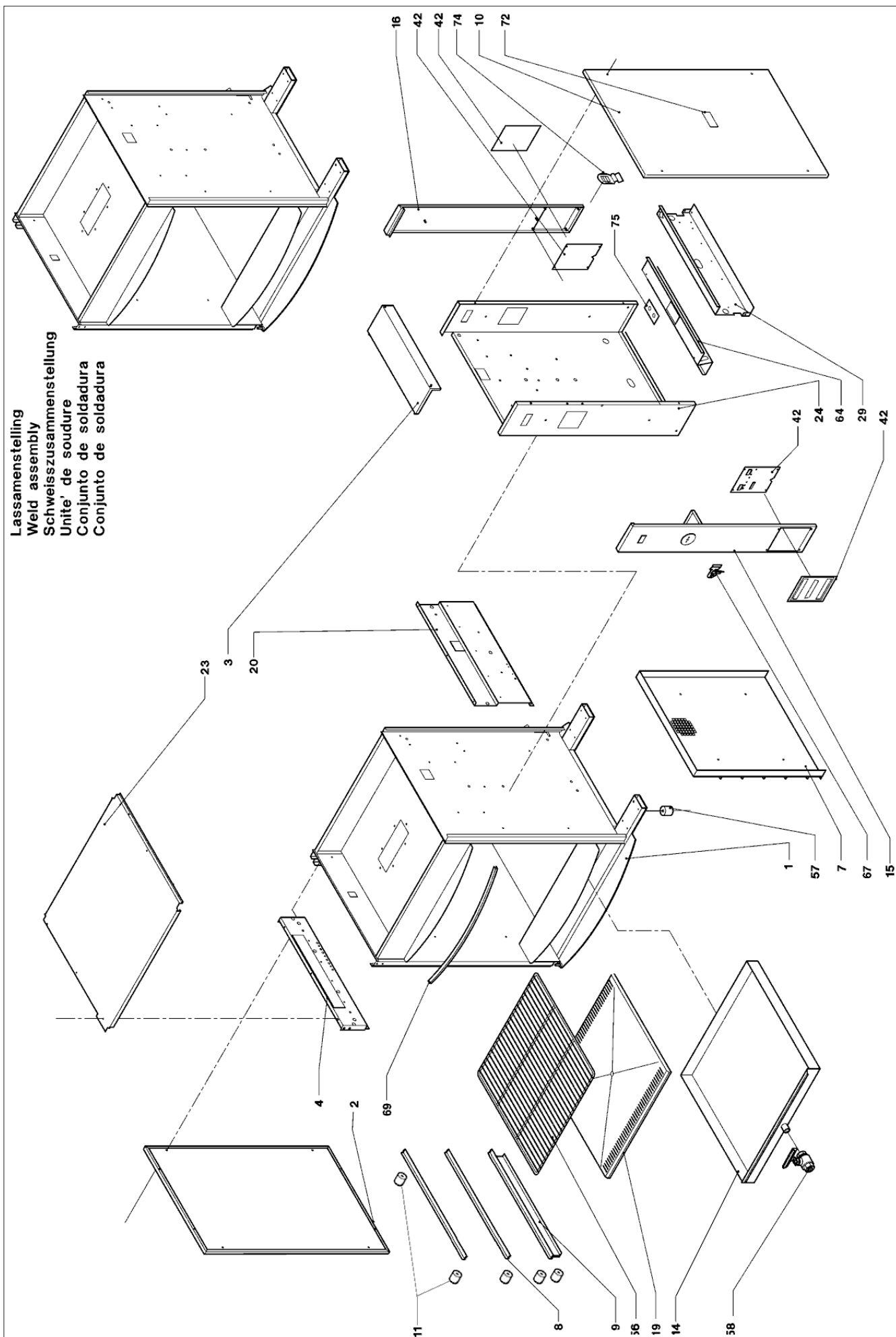


Item	Partnumber	Qty.	Description
1	9170448	1	Frame, ass.
2	9170404	1	Heat shield
3	9170419	1	Side panel, left
3-1	9170475	1	Side panel, right
4	9174005	1	Cover, removable
5	9170421	2	Side panel, top
9	9170425	1	Reinforcement, side plate, right
12	9170444	1	Support, gear motor
13	9170450	1	Mounting plate, blower
14	9170451	1	Drawer
15	9170606	1	Operation panel
16	9174031	1	Panel, customer side
20	9174004	1	Cap, top
21	9172202	2	Bottom plate, coated
22	9174013	1	Reinforcement, side plate, left
23	9174015	1	Cover plate, machine components
24	9174016	1	Ceiling
29	9174099	1	Cover, removable
30	9116581	1	Cover plate, blower
31	9111913	1	Air guide plate
32	9174034	1	Mounting plate
40	9011260	4	Leg, rubber
56	9073181	4	Strain relief
57	9112430	4	Washer, insulation support
58	9172053	8	Nut
59	9171008	1	Drain-tap with handle
60	9172040	2	Name plate Fri-Jado, foil + backplate
61	9172045	1	Foil + backplate
64	9174146	1	Protection plate, electric components
98	9172116	2	Sealing profile, Silicon L= 71 cm
99	9174151	1	Plate, strain relief
100	9174140	1	Spark catcher
101	9123467	1	Indication plate

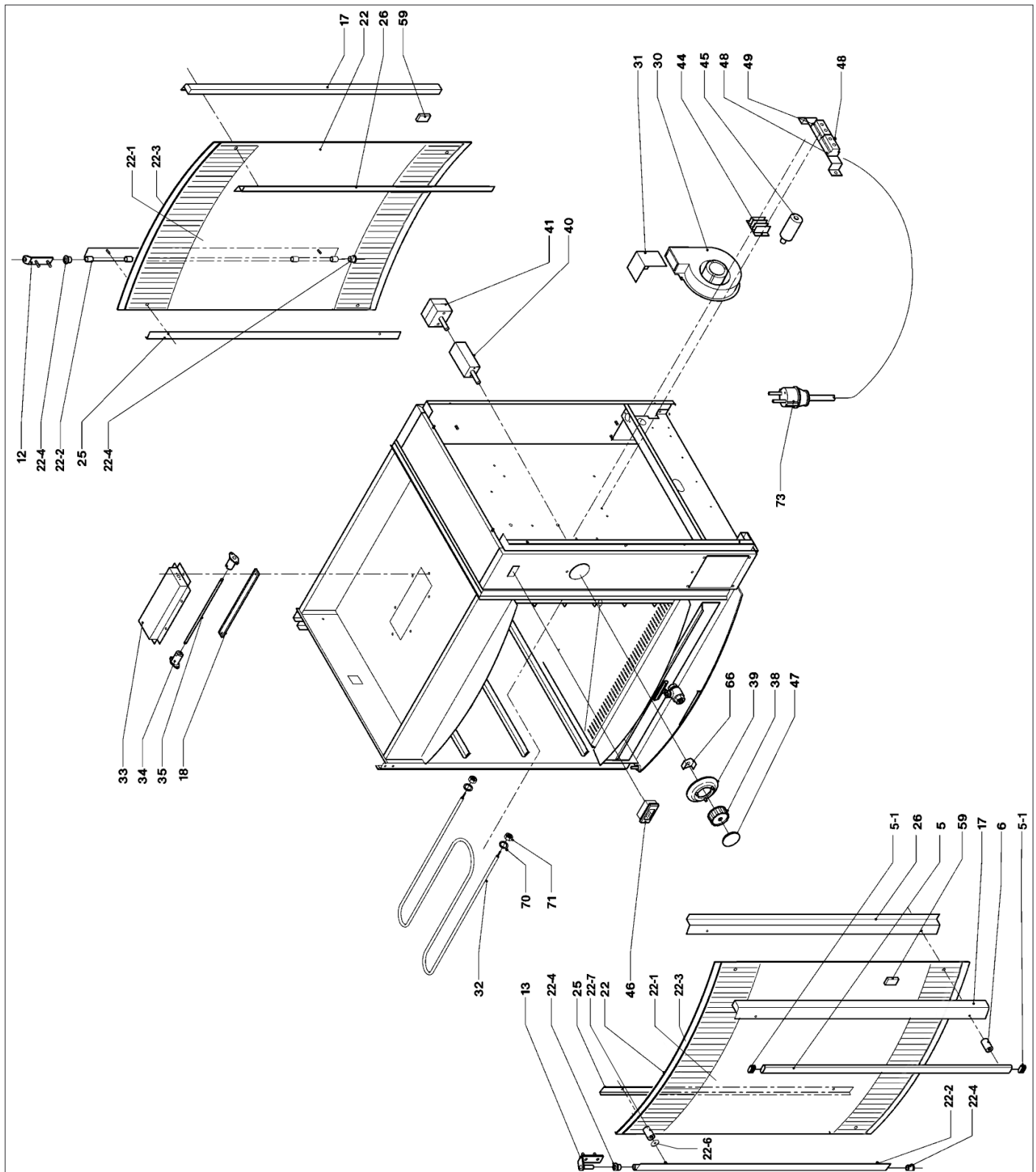


Item	Partnumber	Qt.	Description
41	9110048	2	Blower
42	9040633	2	Heating element 208 V, 2100 W
43	9110909	1	Heating element 208 V, 3100 W
44	9110023	4	Lamp holder, cap + housing
46	9056082	2	Lamp, quartz, 1000 W
47	9172063	1	Steel bearing, 14 mm
48	9073131	1	Sealing ring
49	9070094	1	Temperature sensor
50	9172249	1	Rotor disc, right, coated, incl. support pins
51	9172248	1	Rotor disc, left, coated, incl. support pins
52	9172078	1	Fanblade, motor
55	9110802	1	Plug, TG
62	9110242	1	Display
63	9110276	1	Power section
67	9172021	1	Control knob, grey
70	9172037	1	Back plate, main switch 0-1
83	9172049	1	Cover, knob
84	9174131	1	Door handle
84-1	9171014	2	Plug, door handle
85	9174133	2	Spacing pin
88	9110072	4	Strain relief
90	9044205	2	Fuse holder
91	9110250	2	Fuse, 10A
92	9172113	1	Flatcable, 34-pol.
93	9070141	54	Magnet block
94	9172052	1	Locking ring, knob
96	9172405	1	Connecting cable with plug 15-50P
102	9174162	24	Seal ring
103	9174163	8	Distance ring, innerglass 3 mm
104	9171018	3	Plug
105	9151010	1	Connecting block
108	9172252	12	Tensilock bolt M5x10, mushroom head, coated

Item	Partnumber	Qt.	Description
7	9170423	2	Hinge profile
8	9174029	4	Cover profile, inner glass
10	9170426	1	Hinge, right
11	9170427	1	Hinge, left
17	9116662	2	Protection, lamp
18	9172205	1	Rotor shaft, ass., coated
19	9170454	2	Profile, magnet
25	9174022	2	Mounting profile, hinge side
26	9174025	2	Fastening, door handle
27	9174026	2	Holder, magnet
28	9174027	2	Profile
33	9112210	2	Mounting plate, lamp holder
34	9173051	1	Electric panel, ass.
34-1	0166555	1	Earth symbol
34-2	8033659	1	Connecting block, 9-pol.
34-5	9044564	1	Connecting block, 1,2,3
34-6	9044572	1	Connecting block, 4,5,6
34-7	9070531	1	Thermostat 50-250 °C
34-8	9070840	2	Grommet
34-9	9077070	1	Magnetic switch
34-10	9077088	1	Bracket, magnetic switch
34-11	9077101	1	Capacitor 2,5 mF
34-12	9110030	2	Capacitor 1,5 mF
34-15	9174106	1	Electric panel
34-16	9172328	1	Main switch
35	9174161	1	Protection support
36	9110797	1	Sealring, drive bearing
37	9173004	1	Gearmotor, complete with drive arm
38	9172001	2	Glass, inner
39	9172107	2	Glass black, outer incl. hinge profile
39-1	9172019	2	Glass black, outer
39-2	9170422	2	Hinge profile
39-3	9172079	4	Protection profile
39-4	9172054	4	Brass bearing 8 mm
39-5	9172122	4	Brass bearing 8 mm, adjusted
39-6	9174162	8	Seal ring
39-7	4289966	8	Distance ring, outerglass



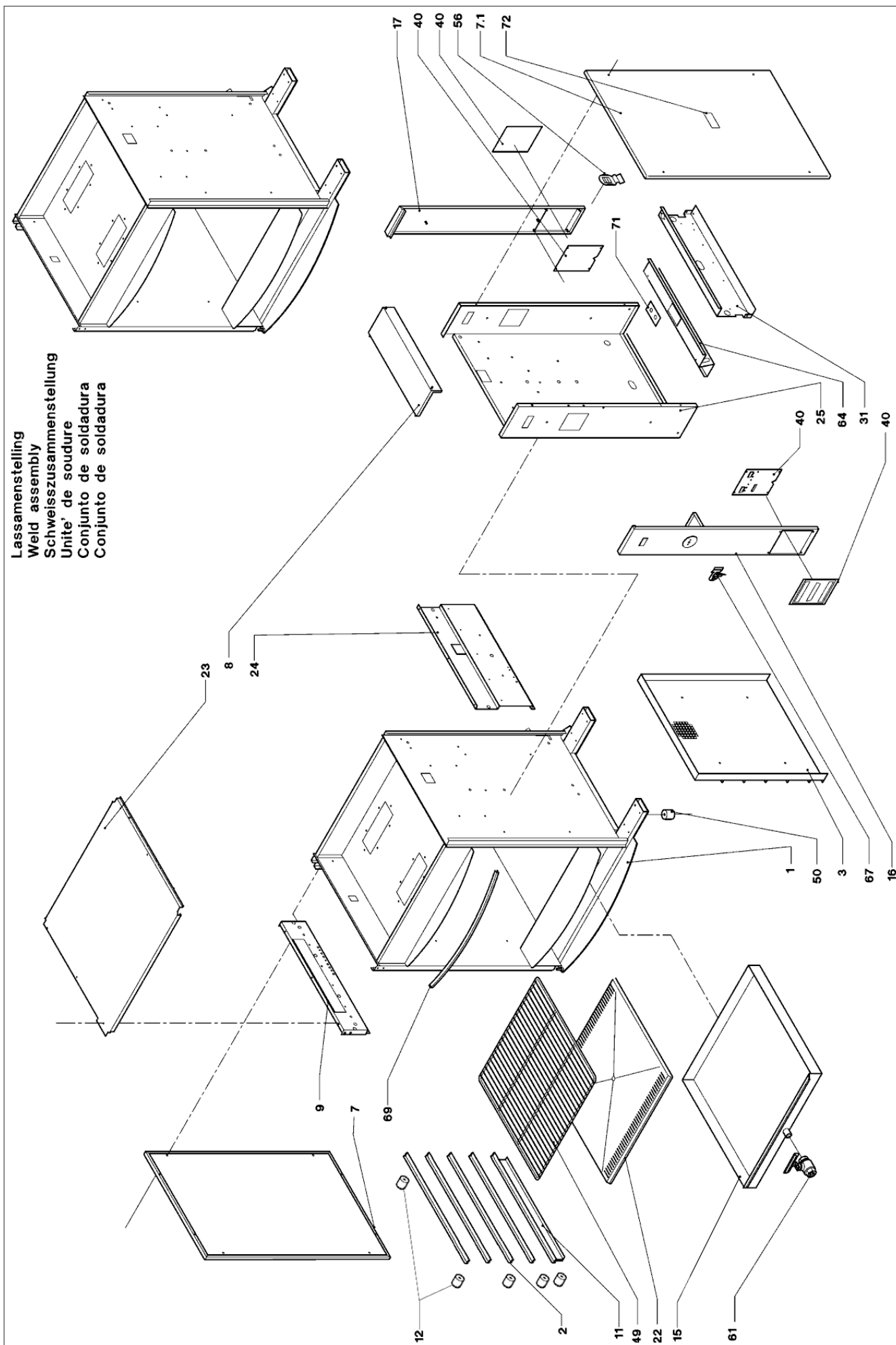
Item	Partnumber	Qt.	Description
1	9170447	1	Frame, ass.
2	9170428	1	Side panel, left
3	9174061	1	Cover, removable
4	9170432	1	Side panel, top
7	9170439	1	Ventilating plate
8	9174117	3	Runner
9	9174096	1	Profile for bottom plate
10	9170480	1	Side panel, right
11	9171020	8	Spacing pin
14	9170458	1	Drawer
15	9170460	1	Operation panel
16	9174075	1	Panel, customer side
19	9174089	1	Bottom plate
20	9174092	1	Reinforcement, side plate, right
23	9174060	1	Cap, top
24	9174095	1	Cover plate, machine components
29	9174073	1	Mounting plate
42	9172040	2	Name plate Fri-Jado, foil + backplate
56	9142192	3	Display rack
57	9011260	4	Leg, rubber
58	9171008	1	Drain-tap with handle
64	9174142	1	Spark catcher
67	9172053	8	Nut
69	9172117	2	Sealing profile, Silicon L= 55 cm
72	9123467	1	Indication plate
74	9073181	3	Strain relief
75	9174151	1	Plate, strain relief



59	9070141	32	Magnet block
66	9172052	1	Locking ring, knob
70	0169197	2	Gasket, heating element
71	0169189	2	Nut, heating element
73	9172400	1	Connecting cable with plug 6-15P

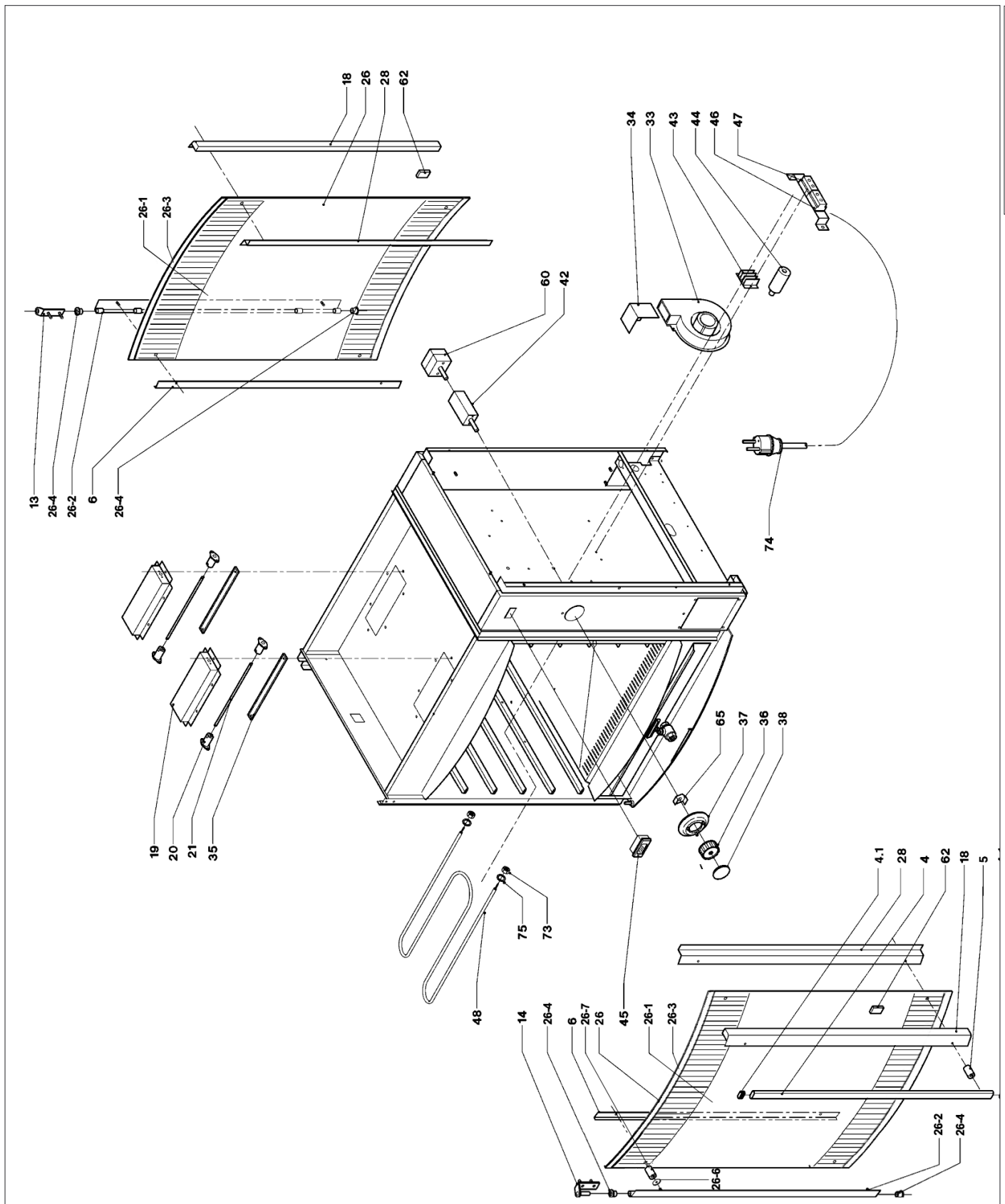
Item	Partnumber	Qty.	Description
5	9174132	1	Door handle
5-1	9171014	2	Plug, door handle
6	9174133	2	Spacing pin
12	9170426	1	Hinge, right
13	9170427	1	Hinge, left
17	9170464	2	Profile, magnet
18	9174115	2	Under plate
22	9172108	2	Glass black, outer incl. hinge profile
22-1	9172020	2	Glass black, outer
22-2	9170441	2	Hinge profile
22-3	9172080	4	Protection profile
22-4	9172054	4	Brass bearing 8 mm
22-6	9174162	8	Seal ring
22-7	4289966	8	Distance ring, outerglass
25	9174079	2	Mounting profile, hinge side
26	9174083	2	Fastening, door handle
30	9110048	1	Blower
31	9142265	1	Spray mouth
32	9160865	1	Heating element, 2500 W
33	9174125	2	Lamp shade
34	9052826	2	Lamp holder
35	9082774	2	Lamp, Halotherm 200 W
38	9172021	1	Control knob, grey
39	9172408	1	Back plate, switch °F
40	9040714	1	Main switch, warmer
41	9052842	1	Thermostat 30-110 °C
44	9040722	1	Connecting block
45	9110030	1	Capacitor 1,5 mF
46	9082164	1	Thermometer, analogue °F
47	9172049	1	Cover, knob
48	9044564	1	Connecting block, 1,2,3
49	9044572	1	Connecting block, 4,5,6

Lassamenstelling
Weid assembly
Schweisszusammenstellung
Unite' de soudure
Conjunto de soldadura



STW7 - Sheet Iron Work

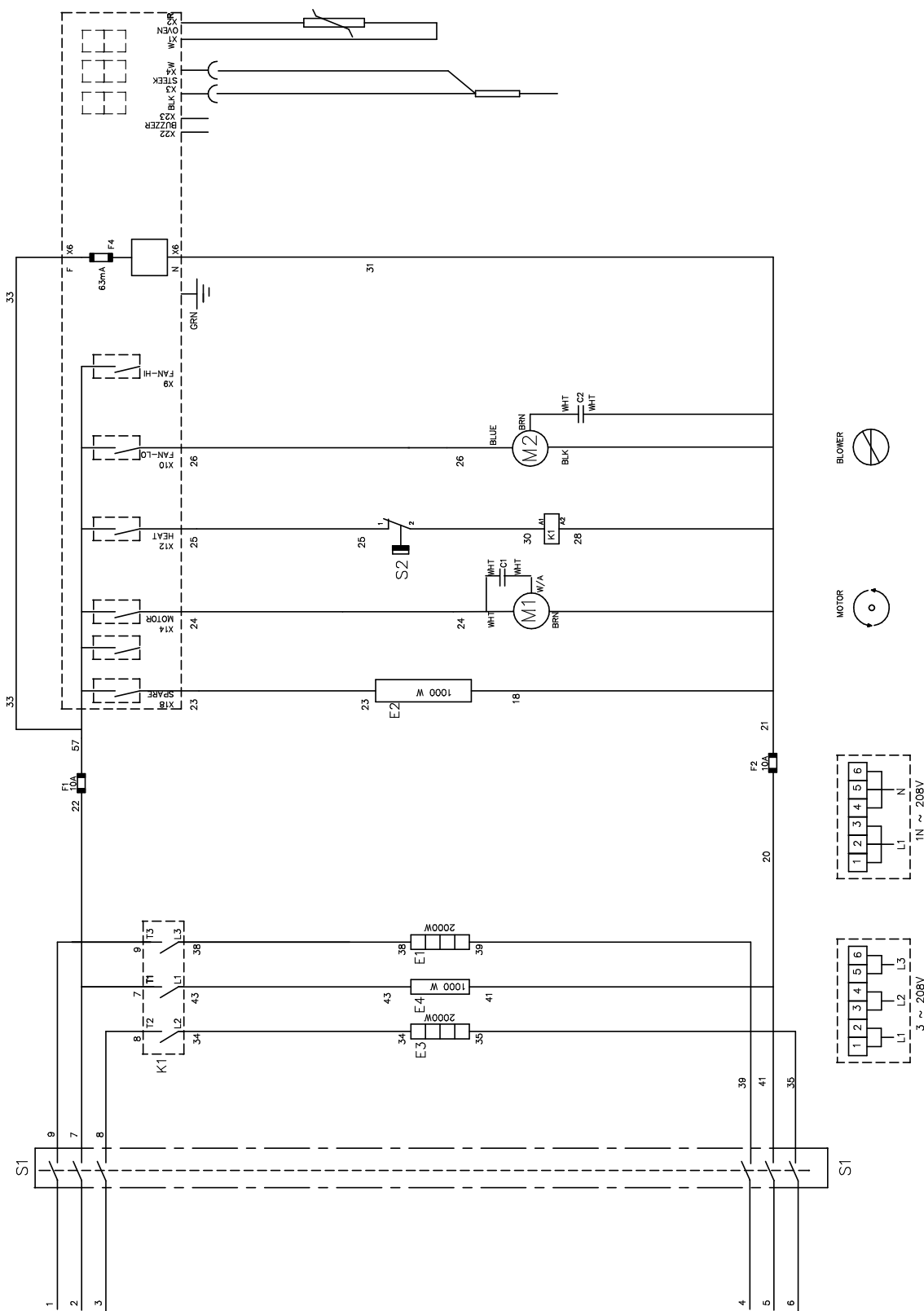
Item	Partnumber	Qty.	Description
1	9170449	1	Frame
2	9174053	5	Runner
3	9170412	1	Cover plate, blower
7	9170419	1	Side panel, left
7-1	9170479	1	Side panel, right
8	9174005	1	Cover, removable
9	9170421	1	Side panel, top
11	9174052	1	Profile for bottom plate
12	9171020	12	Spacing pin
15	9170451	1	Drawer
16	9170462	1	Operation panel
17	9174031	1	Panel, customer side
22	9174044	1	Inner bottom
23	9174045	1	Cap, top
24	9174046	1	Reinforcement, side plate, right
25	9174048	1	Cover plate, machine components
31	9174034	1	Mounting plate
40	9172040	2	Name plate Fri-Jado, foil + backplate
49	9040748	3	Display rack
50	9011260	4	Leg, rubber
56	9073181	3	Strain relief
61	9171008	1	Drain-tap with handle
64	9174140	1	Spark catcher
67	9172053	1	Nut
69	9172116	2	Sealing profile, Silicon L= 71 cm
71	9174151	1	Plate, strain relief
72	9123467	1	Indication plate



65	9172052	1	Locking ring, knob
73	0169189	2	Nut, heating element
74	9172402	1	Connecting cable with plug 15-15P
75	0169197	2	Gasket, heating element

Item	Partnumber	Qty.	Description
4	9174131	1	Door handle
4-1	9171014	2	Plug, door handle
5	9174133	2	Spacing pin
6	9174022	2	Mounting profile, hinge side
13	9170426	1	Hinge, right
14	9170427	1	Hinge, left
18	9170454	2	Profile, magnet
19	9174125	2	Lamp shade
20	9052826	4	Lamp holder
21	9082774	2	Lamp, Halotherm 200 W
26	9172107	2	Glass black, outer incl. hinge profile
26-1	9172019	2	Glass black, outer
26-2	9170422	2	Hinge profile
26-3	9172079	4	Protection profile
26-4	9172054	4	Brass bearing 8 mm
26-6	9174162	8	Seal ring
26-7	4289966	8	Distance ring, outerglass
28	9174025	2	Fastening, door handle
33	9110048	1	Blower
34	9174139	1	Spray mouth, blower
35	9174115	2	Under plate
36	9172021	1	Control knob, grey
37	9172408	1	Back plate, switch °F
38	9172049	1	Cover, knob
42	9040714	1	Main switch, warmer
43	9040722	1	Connecting block
44	9110030	1	Capacitor 1,5 mF
45	9082164	1	Thermometer, analogue °F
46	9044564	1	Connecting block, 1,2,3
47	9044572	1	Connecting block, 4,5,6
48	9005251	2	Heating element, 1500 W
60	9082994	1	Thermostat 32-110 °C
62	9070141	36	Magnet block

ELECTRICAL DIAGRAMS



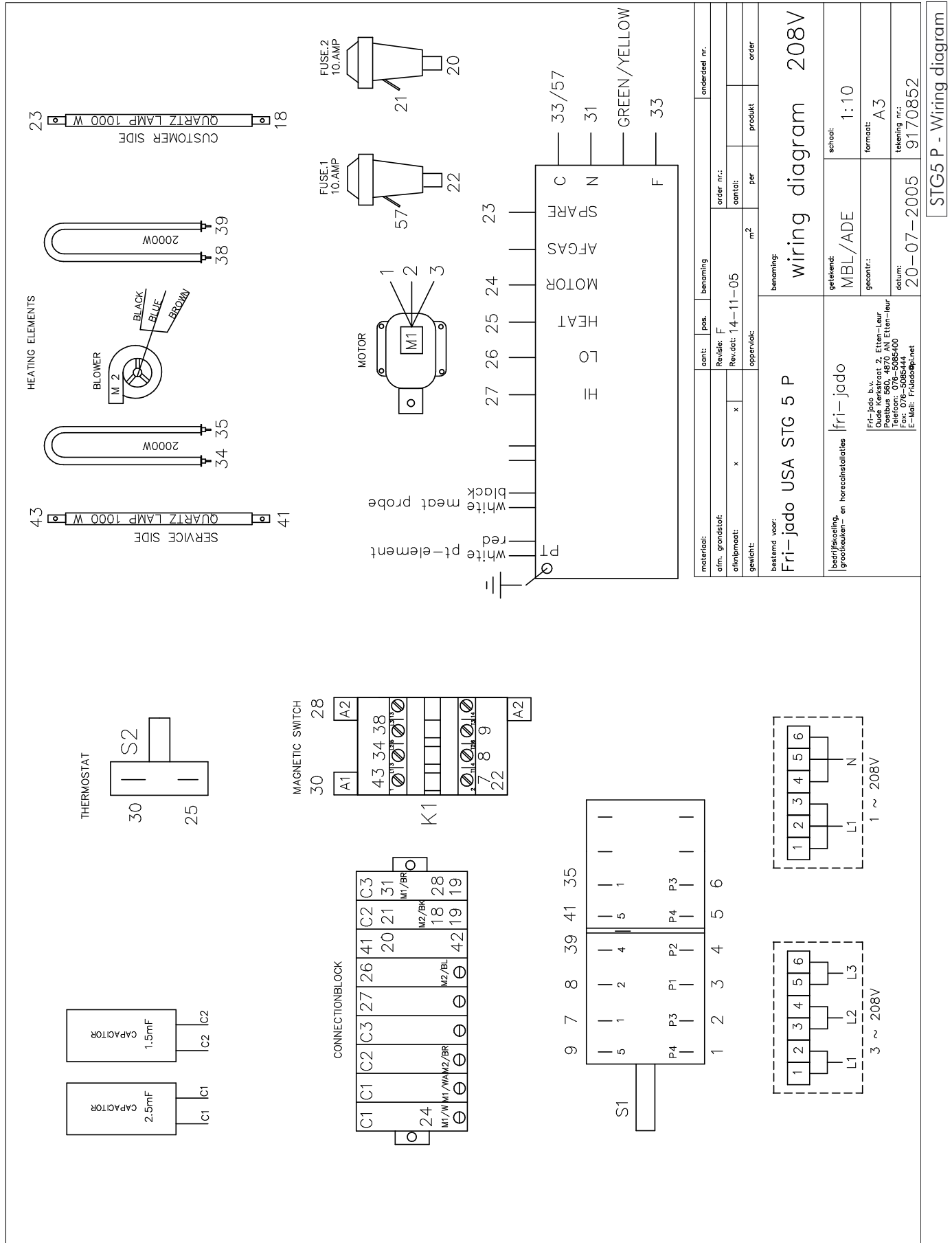
Model : STG 5 P U.S.

Descr.: Circuit diagram

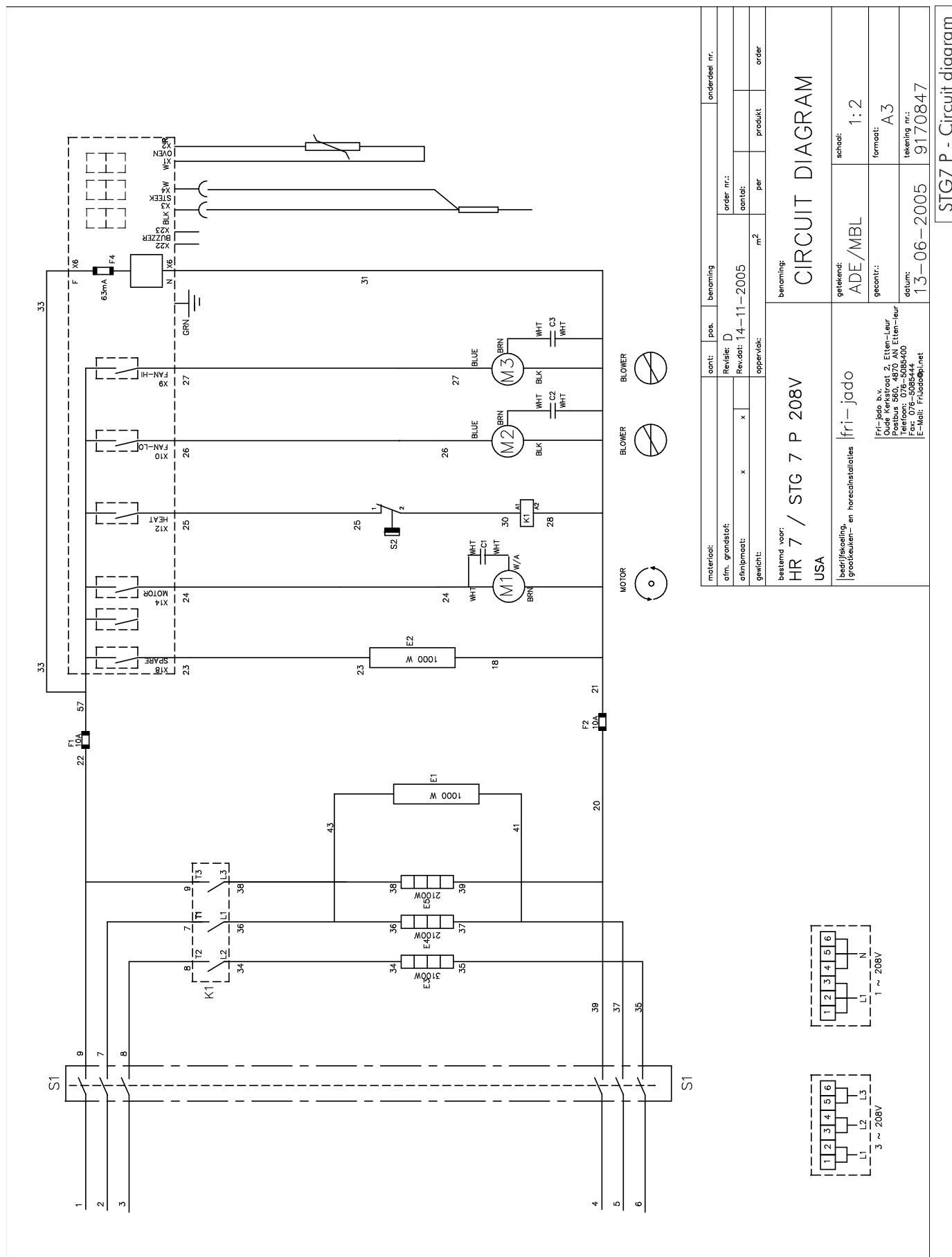
DR.NR. : 9170846

REV.: c

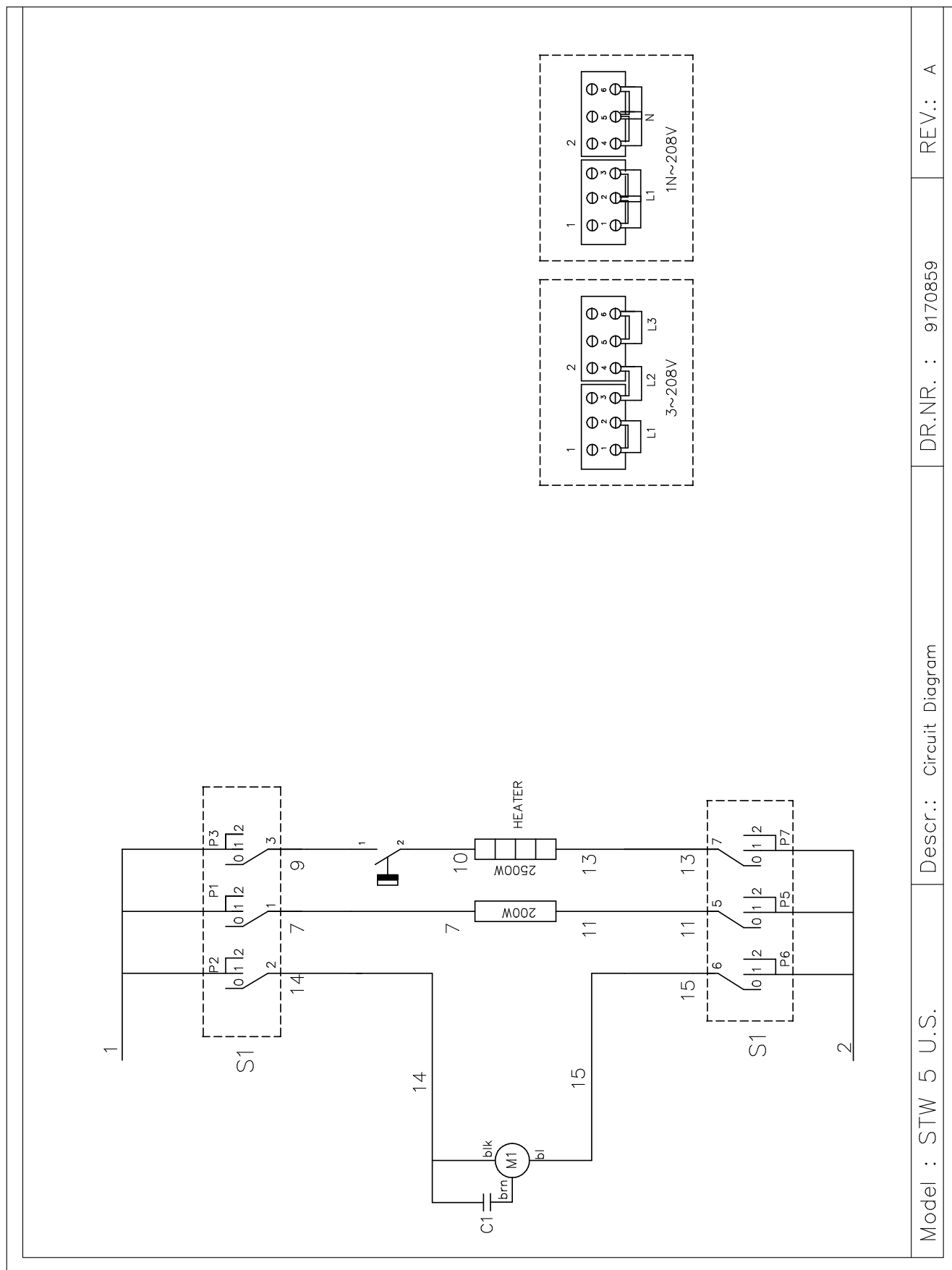
STG5 P - Circuit diagram

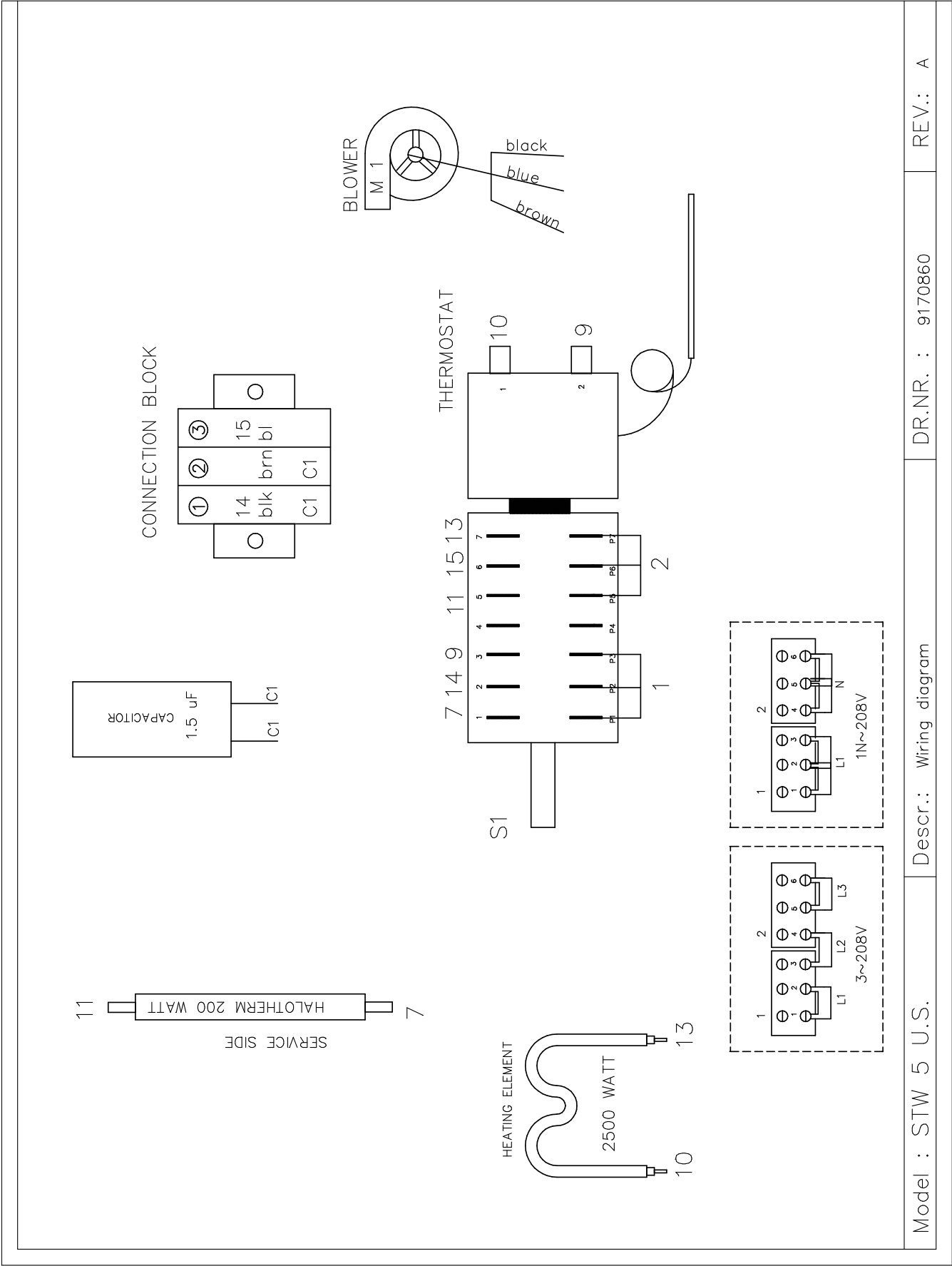


STG5 P - Wiring diagram

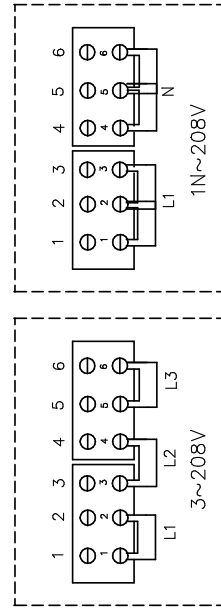
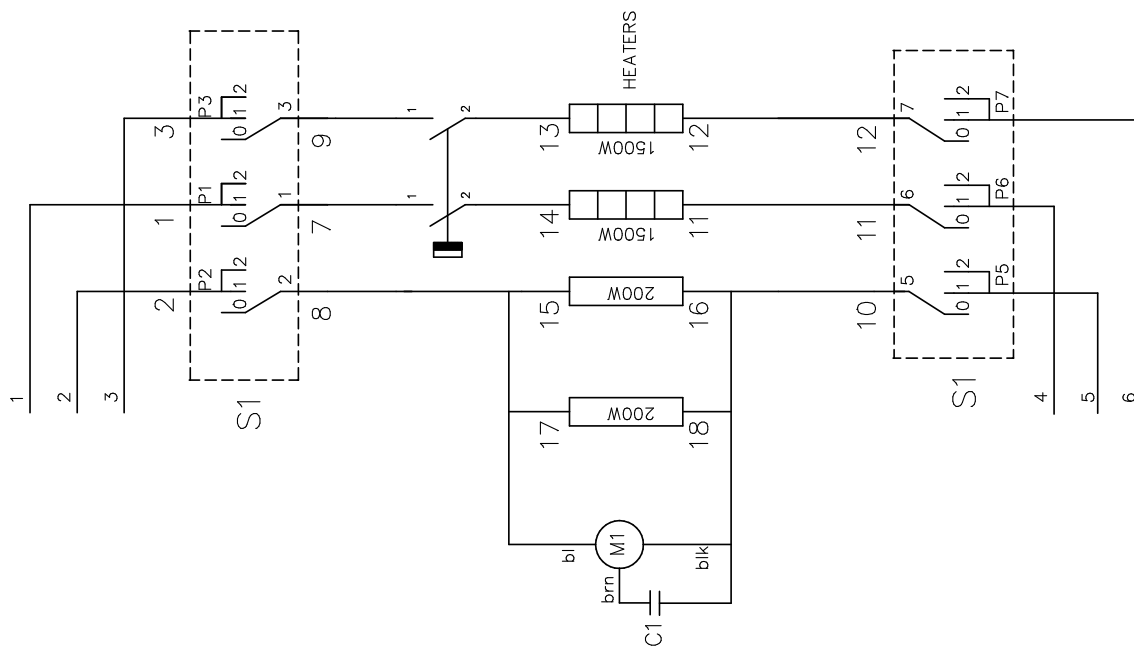








STW5 - Wiring diagram



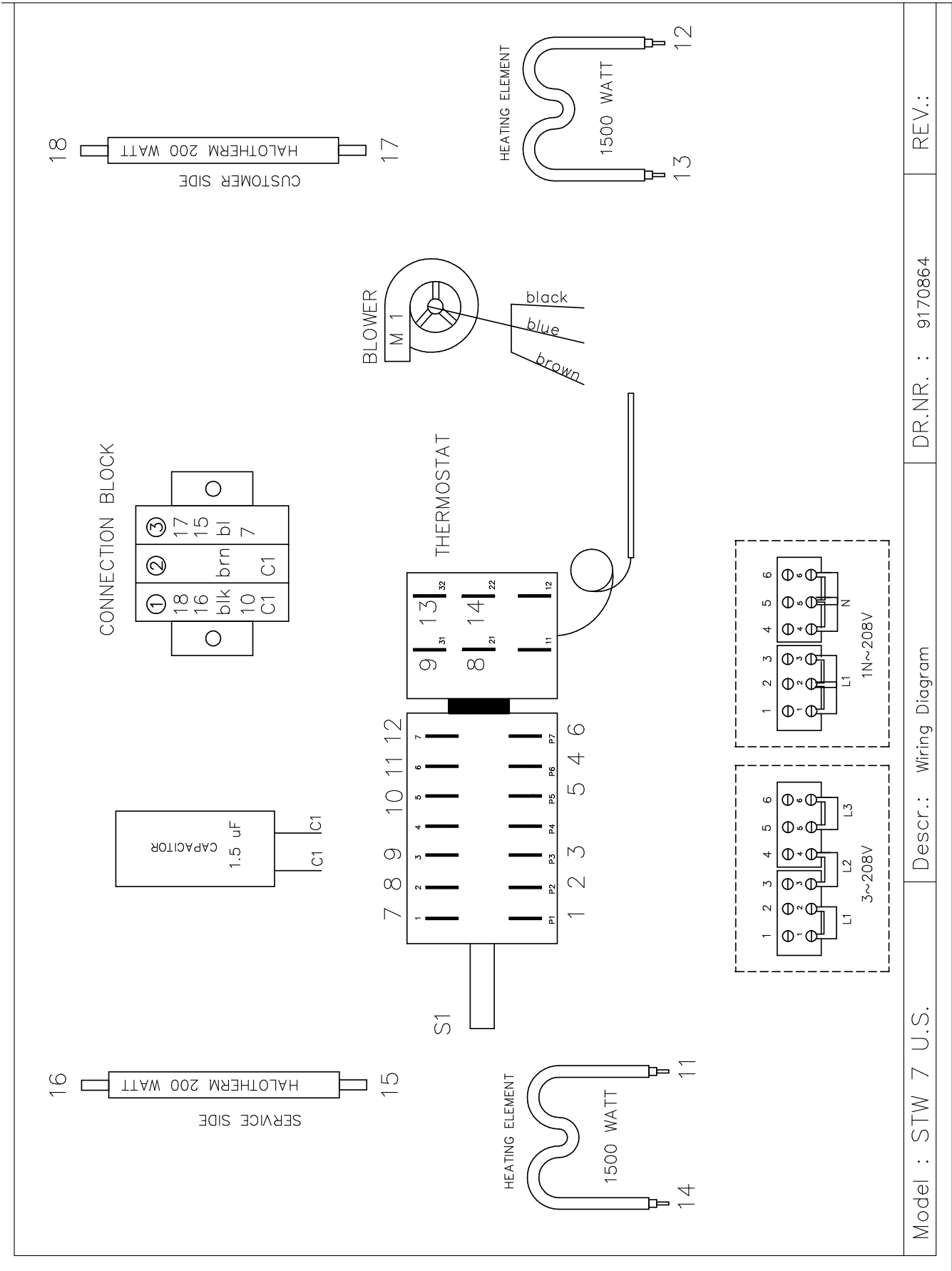
Model : STW 7 U.S.

Descr.: Circuit Diagram

DR.NR. : 9170862

REV.:

STW7 - Circuit diagram



Model : STW 7 U.S.

Descr.: Wiring Diagram

DR.NR. : 9170864

REV.:

STW7 - Wiring diagram

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